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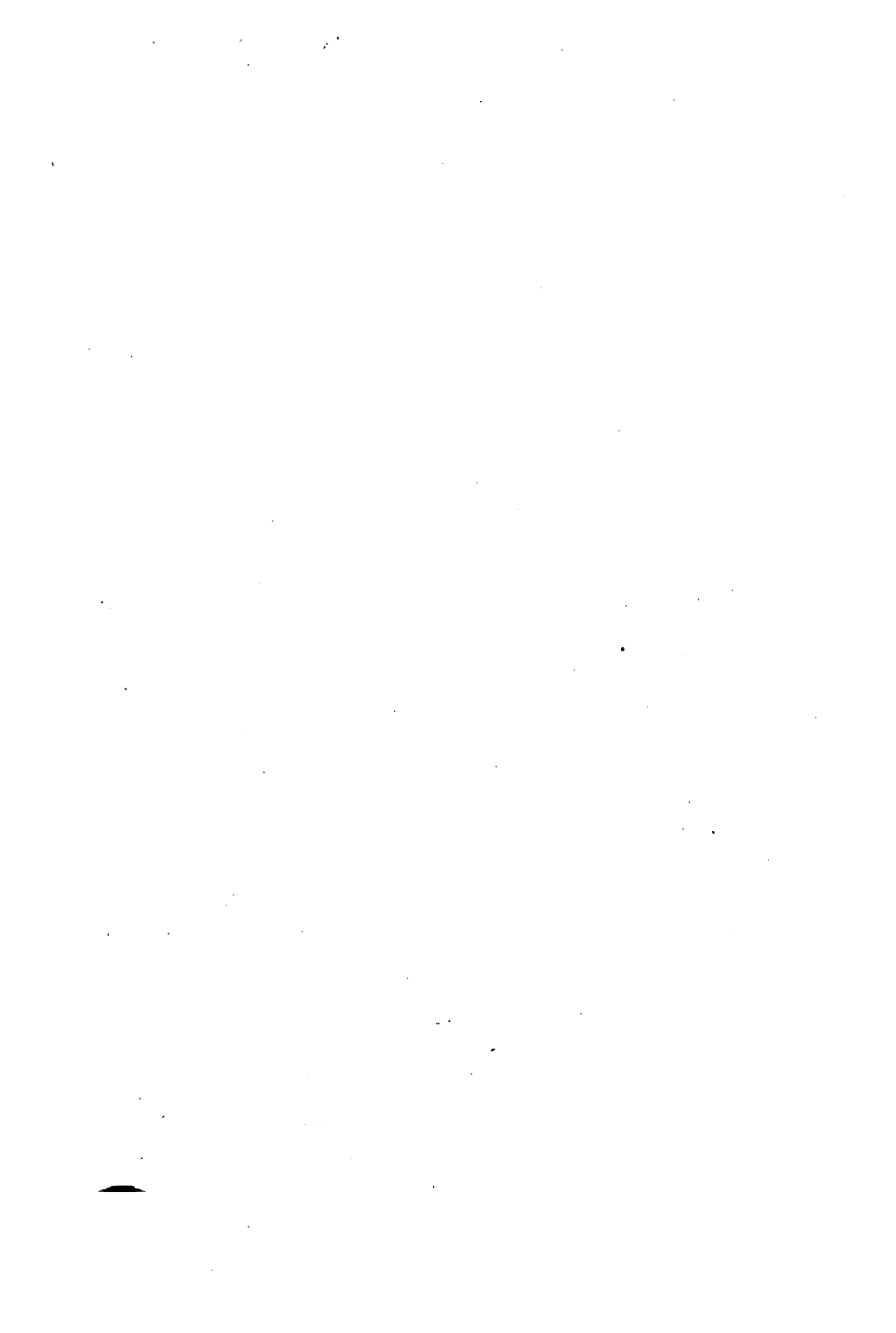


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Construction Work
for the
Primary Grades

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Construction Work

FOR THE

Primary Grades

EDWARD F. WORST,
Director of Elementary Manual Training
and Construction Work
CHICAGO, ILL.



MILWAUKEE, WIS.
THE BRUCE PUBLISHING CO.

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Introduction



THESE outlines on construction work are for the teacher's use. It is not intended that the suggestions contained in them shall be mechanically followed. It is, however, expected that the teacher, in order to become familiar with the subject-matter, shall work out in detail each problem suggested for her particular grade. Not until this is done can she appreciate its value. When she has made the work a part of herself she will present it, not as some one else would direct her to do it, but in her own way.

Construction work in the primary grades, consisting largely of disconnected exercises without apparent reasons for presenting them to the children, is likely to be much less useful as an educational agency than it should be. It has failed to give that high degree of mental discipline, which, when properly presented, it is so well calculated to afford. The number work growing out of the construction work when properly taught, affords the finest mental discipline of any study in the primary grades.

The outlines will suggest work that is not only simple, progressive, and practical, but work that is adapted to the academic course, thus making it possible for the work to be taught in connection with other branches of school studies.

In no instance should material be passed to pupils and mechanical dictation be given them for the construction of a certain problem. Dictation has a value and place, but not until a necessity has been created for the exercise, followed by a class discussion as to its value and its construction.

It is not always wise to give directions verbally. The child is learning to read and to write. To give directions through reading and writing impresses him with the fact that it is really a way he can learn from others, and adds greatly in the work of the upper grades, where the child must be able to read understandingly before he is able to perform much of his work.

Show the class a finished exercise made by yourself. This exercise should not be too difficult, and not so different from previous exercises that the children will not be able to comprehend the new step. After the exercise has been carefully examined, allow the pupils to make others like it as nearly as possible.

After the construction of a certain exercise, under the teacher's direction, have pupils repeat the exercise, doubling all dimensions. Have them repeat the exercise by taking half of each dimension.

Give written directions on the board, such as the following.

Draw a rectangle 4x3 inches.

Draw another rectangle 6x4 inches.

Draw another rectangle, using one-half the above dimensions.

Have the pupils, very early in the work, understand a pattern drawing. Place on the board a pattern drawing of some object to be made, asking the class to follow it.

It is well to remember that the greatest value grows out of problems suggested by the real needs of the pupils, as the construction of any problem for which there is a real motive brings forth the pupil's very best efforts.

In the primary grades there should be three distinct groups of problems, those relating to the schoolroom administration, the child's play, and problems related to the home.

Under schoolroom administration there are boxes, books, envelopes, etc. These are constructed for the purpose of taking care of the various lines of educative seat work suggested throughout the year's work.

The doll house and its modification takes care of the play side.

For the home there should be an occasional exercise carried out by the pupils. This should be something appropriate for the home—a button book, needle book, stamp case, court plaster case, etc.

Reasons for Giving Construction Work.

1. It develops control of muscles and the co-operation of mind and hand, leading to skill.
2. It helps to fix habits of accuracy, neatness and thinking, and doing things in an orderly way.
3. It furnishes opportunity for teaching (a) numbers, (b) language, (c) reading, (d) free expression.
 - (a) Refer to number work based on construction calling for folding into sixteen squares and the use of the ruler.
 - (b) Language: If the question, "How many squares are there in one row?" is asked, the answer in a complete statement, "There are four squares in one row," will lead the child into habits of proper expression. Tell about the second row; the third row.
 - (c) A new vocabulary made up of such words as "edge, square, lower, right, left, line," etc., soon grows from the work, and may be utilized in giving directions through written sentences on the board.
 - (d) Much opportunity should be given to children to express freely in a concrete way the ideas gathered from literature and their own experiences.
4. It gives ability to follow directions.
 - (a) Through dictation.
 - (b) Through the use of patterns.

- (c) It leads to the making of working drawings, to reading and interpreting intelligently, and the making of blueprints in the seventh and eighth grades.
- 5. Training in taste. This comes through:
 - (a) Selection of materials.
 - (b) Combination of colors.
 - (c) Decoration of things made.
- 6. It gives the child an appreciation for a well-made article.
- 7. It affords an opportunity for developing the power of invention
 - (a) Selection of size appropriate for certain uses.
 - (b) Selection of material appropriate for certain uses.
 - (c) Selection of form and color appropriate for certain uses.
- 8. Application of labor. It gives the child an opportunity to expend his energy on lines that are educative.
- 9. It furnishes opportunity for educative seat work.

Every up-to-date teacher must realize the importance of hand work. The time for the hit-and-miss construction work has passed and the demand comes from the teachers for the more practical and related problems for the primary grades. It will be observed that the seasons of the year have somewhat to do with the planning of the right sort of problems. The writer urges that the teacher perform the various operations described in order that she may adapt and present the work to the pupils in her own way.

The writer wishes to state that the graded course which follows is by no means an ideal one. It is, however, a course which very closely relates to the academic work and the cost is brought within the amount easily available for each child.

In case of an unlimited allowance there are many other problems which might be made to take the place of those suggested.

EDWARD F. WORST.

Table of Contents

First Grade

	Page
September—Kinds of Cutting, Cutting in Mass, Making a Block Print, Cutting Envelope, Construction of Envelope, Simple Decoration, Cutting from Object and from Memory, Cutting to Line, The Game, Envelope for Dissected Cuttings, Care of Seat Work, Making a Hektograph, Freehand Imaginative Cutting, Box for Shoe Pegs, Cover for Box, Suggestions for the Use of Pegs.....	9-24
October—Cutting to Line, Clay, Box for Picture Number Cards, The Ruler as a Straight Edge, Peg Board, Use of Board, Envelope for Peg Board, Construction of Envelope, Envelope for Matching Number Game, The Game, Cutting Book, Clay Box, Construction of Box, Construction of Cover, Lanterns, Alphabet Book, Construction of Book, How to Use the Book.....	25-43
November—Cuttings, Clay Modeling, Boat with Sails, Log House, Cradle, Construction of Church, The Church (Main Building), Trees, Box for Vocabulary Cards, How to Use Vocabulary Cards, Number Game, The Game, Envelope for Vowel Families	44-55
December—Cutting and Tearing, Clay Modeling, Christmas Tree Decorations, Popcorn Basket, Three-sided Basket with Point on Each Side, Three-sided Basket with Two Points on Each Side, Lanterns, Wall Pocket, Picture Frame, Cake Basket for Christmas Tree, Christmas Tree Ornament, Book Mark, Hair Receiver, Candy Box, Closed Candy Box, Shaving Pad Calendars, Envelope for Calendar, Darning Cotton Case, Winding the Cotton, Making the Box, Another Interesting Basket, Story Book, Making the Book, Pictures and Sentences	56-70
January—Learning to Measure, The Foot Rule, The Inch, Making Decorative Chains, The Doll House, Making a Table, Chair, Bed, Davenport; Weaving a Mat, Envelope for Alphabet Matching Game.....	71-82
February—Cutting, Trees, Clay, Review of Log House, Covered Wagon (Prairie Schooner), Small Furniture, Doll House Furniture, Emphasis on the Use of the Ruler, Badges, Drawing the Square, Soldier Cap, Making a Trunk, Cupboard, Dresser, Serving Table and Stove; Valentines, Envelopes. Weather Record Box.....	83-94

	Page
March —Cutting, Clay, Pin Wheel, Group Problems, The Farm, Making the Fences, Other Exercises without Paste, Chicken Coop, Wagon, Making the Wagon, Number Based on the Construction of Wagon, Number Book, Dominoes, Box for Dominoes, Cover for Box, How to Use the Dominoes.....	95-104
April —Cutting and Tearing, Clay, Easter Basket, Bird House, Easter Cards, Envelope, Geometric Game, Other Ways of Using the Board.....	105-113
May and June —Cutting and Tearing, Clay Modeling, Badges, Flower Pot and Plant, Making the Flower Pot, Cutting the Flower, The Leaves, Assembling the Parts, Group Problem, The Circus Parade, Cutting Animals and Cage, Assembling the Parts, Bird Cage, Berry Basket or Box, Reins.....	114-121

Second Grade

September —Cutting and Tearing, Cutting Envelope, Construction of Envelopes, Box, Construction of Box, How to Use the Number Cards, Care of Seat Work, Envelope, The Sheet of Phonograms (Fig. 9), Construction of Envelope, Box, Formal Number Lesson, The Cover.....	125-137
October —Cutting and Tearing, The Half Inch, Cutting Book, Tying the Pages, Lantern, Double Weaving-Book Mark, Circular Basket	138-145
November —Freehand Cutting, Puritan Cap for Girls; Soldier Cap for Boys, Construction of Cap, Kerchief, Indian Head-Dress, Basket (Thanksgiving), Construction of Basket, Original Basket, Spelling Blank, Sewing the Book, Number Game, Use of Board, Envelope, Construction of Envelope..	146-154
December —Cutting and Tearing, Christmas Tree Decoration, Christmas Basket, Other Baskets, Calendar, Envelope, Pin Case, Construction of Cubical Box, Covering the Cube, Box for Pin Holder, Button Book, Envelope.....	155-160
January —Weaving: Iron, Poker or Kettle Holder; The Doll House, Mat for Kitchen Floor, Making a Block Print, How to Use the Block Print, Making a Cupboard, Bed, Table; Number Lesson, Making a Chair, Davenport, Dresser.....	161-172
February —Cutting and Tearing, Folding and Cutting for Valentines, Modified Foldings, Envelopes for Valentines, Cutting Envelope, Box for Colored Sticks and Use of Game, Drawing of Squares, Badges, Drawing of Oblong, Valentines, Folder for Valentine, Raffia Mat, Serving Table, Sideboard, Stove, Woven Rugs.....	173-182

	Page
March—Window Boxes for Doll House, Artificial Flowers, Spelling Book, Box for Initial Blends (Work in English), Making the Box, The Game, Go-Cart, Making the Cart, Hood, Wheel, Handle	183-189
April—Cutting and Tearing, Modeling, Spelling Book, May Basket, Decoration of Basket, Double Woven May Basket, Construction of Basket, Original Problem, Easter Cards, Word Building Game, Playing the Game, Envelope for Game	190-197
May and June—Cutting and Tearing, Badges, Score Card, Construction of Score Card, The Game Bean Bag, Use of Score Card, Ring Toss Game, Flower Pot, The Stems, Leaves and Flowers, Fruit Basket, The Circus Parade, The Cages.....	198-207

Third Grade

September—Score Cards, Envelope, Construction of Envelope, Learning to Read a Pattern Drawing, The Game, Spelling Blank, Construction of Book, Sewing the Book, Pasting the Cover	211-218
October—Cutting, Lantern, Word Book, Construction: First Lesson, Second Lesson, Third Lesson, Fourth Lesson, Fifth Lesson	219-226
November—Cutting and Tearing, Soldier Cap and Puritan Bonnet, Puritan Cradle, Multiplication Game, Multiplication Table, Envelopes, Weaving a Stocking Cap.....	227-235
December—Pin Case, Box to Hold Pin Case, Needle Book, Woven Work Bag, Circle Maker, Blackboard Exercises, Handkerchief Bag, Construction of Loom, Mat, Box with Cover Attached, Christmas Basket, Triangular Candy Box, Circular Book Mark, Book Mark.....	236-248
January—Book Bag, Construction of Loom, Hinged Spelling Blank Cover, Book Press.....	249-260
February—Valentines, Envelope for Valentine, Circular Valentine, Blackboard Exercises, Lincoln and Washington Badge, Decorated Spelling Book, Making the Cover.....	261-265
March—Cutting and Tearing, Marble or Jackstone Bag, Threading the Loom, Making Drawstrings, Number Growing Out of the Marble Bag, Ash Splint Basket, The Cutting Gauge, Cutting the Splints, Paper Strips, Rope Basket, Paper Flower Pot for Germinating Purposes, Constructing the Jar.	266-275
April—Cutting and Tearing, Clay, Follo, Construction of Follo, May Baskets, Constructing the Basket, Easter Basket, Easter Cards	276-286
May and June—Doll's Hammock, Stringing the Loom, Weaving, Tying the Fringe, Score Card, Shuffle Board, Playing the Game	287-291

SEPTEMBER.

Kinds of Cutting.

1. Cutting in Mass:

Purpose:

To give skill and training in handling the scissors through the interest the pupils have at this particular season in the common vegetables, fruits, animals, and birds, as shown in Plates 1 and 2.

The written and printed words should be taught at the time the cutting is being done.

Good pictures of vegetables may be obtained from old seed catalogs, or cutting sheets may be ordered from school supply houses.

"Cutting in mass" is especially good for beginning first-graders because of the freedom allowed in the cutting. The pupil sees the mass and not a fine line, as in the line cutting.

A good hektograph will be of great value in this work.

Making a Block Print.

If the teacher so desires, a very interesting block print may be made of a potato or turnip. With a large knife, cut the potato or a turnip so the largest possible surface is obtained. On this surface, lay a paper cutting of any form desired, and cut vertically around the edge of the pattern thus placed. From the outer edge of the potato or turnip, cut horizontally toward the vertical cut. This causes the part of the potato or turnip outside the edges of the paper to fall away, leaving the desired form, from a quarter to a half inch higher than the other part of the potato or turnip.

To make a printing pad, take a piece of cheesecloth, fold it several times, and moisten with water. Pour a small quantity of ink on the moistened cheesecloth pad. Place the potato or turnip block print on the pad and then stamp on a piece of drawing paper. It takes but a very short time to stamp a sufficient number for pupils of a whole room. The picture thus printed may be cut in a similar manner as the cuttings of previous lessons.

By allowing each pupil to have several block prints of the same kind, a very interesting border may be arranged in the cutting book. Or, one print may be provided for each pupil, to be used as a pattern around which he may draw. This leads to cutting to line.

Cutting Envelope.

Any line of work that is worth doing is worth preserving. The children are led by the teacher to the absolute necessity of constructing some sort of receptacle to hold the cuttings. Whenever possible,

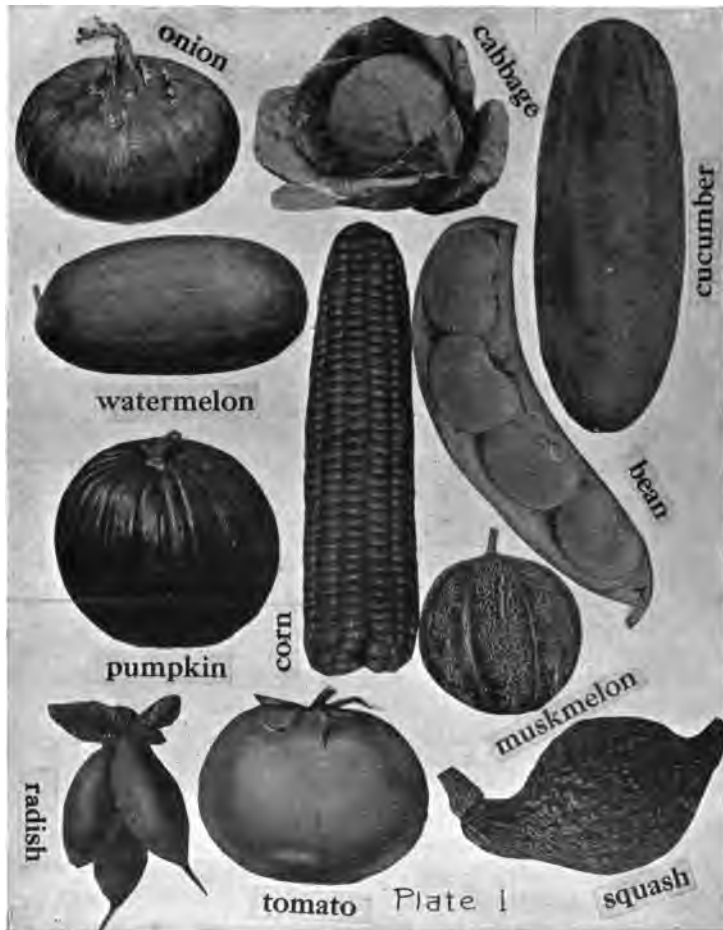


Plate 1.

give the children a voice in planning what is to be constructed. It is necessary that the teacher have something definite in mind in order to get the very best from the children.

Purpose:

To provide a way for the pupils to care for their cuttings until a mounting book has been constructed.

To begin to teach the pupils to care for their work in a systematic and orderly way.

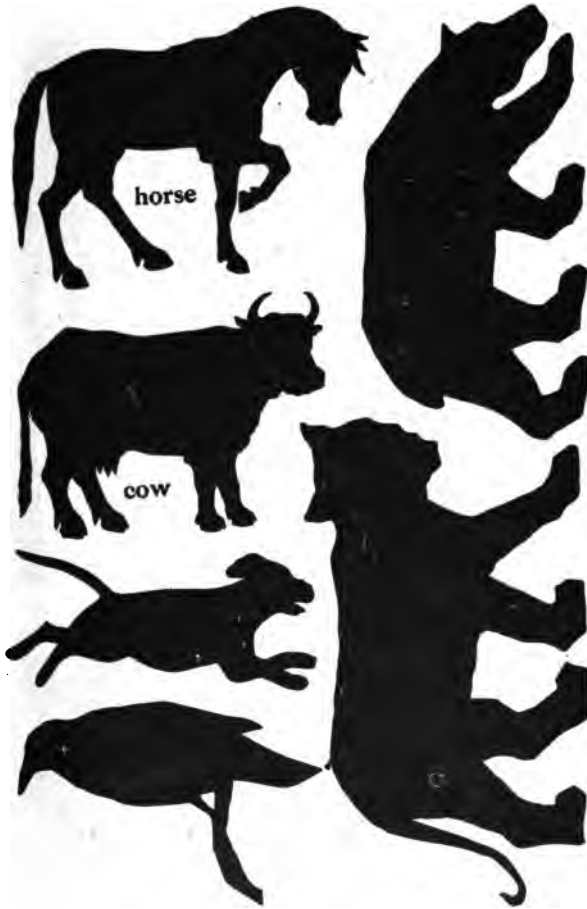


Plate 2.

Materials:

Tinted construction paper; 50 pieces 9x12 inches.

Presentation:

The pupils are already enthusiastic over the construction of a box or envelope in which to place their cuttings.

Pass to each pupil a piece of the 9x12-inch construction paper. (This size is selected because at this time the pupil is unable to handle the 12x18-inch size.)

Why is an envelope better for cuttings than a box?



Plate 3.

With the paper on each desk, allow the pupils to suggest ways the envelope might be constructed.

Construction of Envelope:

Fold over about two inches of the short edge of a piece of 9x12-inch construction paper. Fig. 1.

Fold the opposite edge of the paper up to the crease which is indicated by the dotted line. Fig. 1.

All dotted lines indicate folding. Since this folding is free-hand, no two envelopes will be exactly the same. When the edge

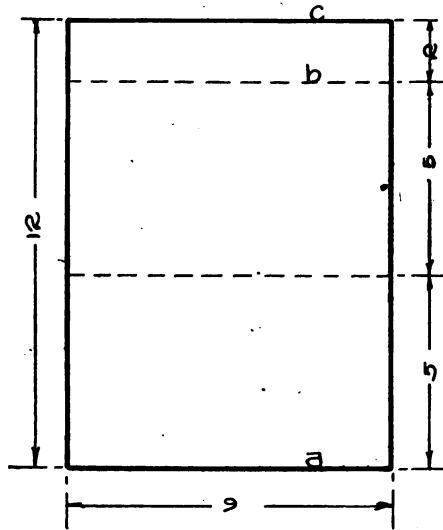


Fig. 1

"a" is folded up to the dotted line "b," and the edge "c" is folded downward along the dotted line "b," we have what is shown in Fig. 2.

To close the edges, it will be necessary, in this exercise, for the teacher to cut on the paper cutter strips of paper 5 inches long and 2 inches wide (see Fig. 3), and have the children fold them lengthwise into halves. Paste is applied, and the folded strips are pasted along the right and left edges of the envelope. In case the folded strips are not exactly as long as the edges over which they are pasted, permit them to come even with the closed bottom edge of the envelope. In case the folded strips are too long, permit the surplus to extend beyond the closed bottom edge. After the pasting is com-

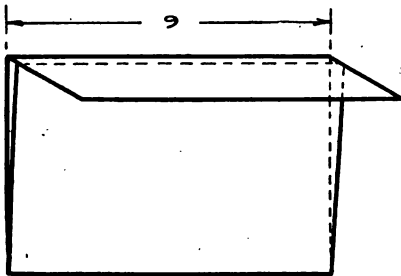


Fig. 2

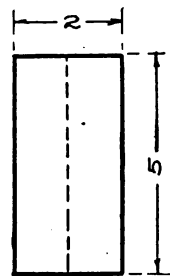


Fig. 3

pleted, the surplus may be cut away. This completes the envelope (see Fig. 4), which is to be used for all lines of cutting until the best ones are chosen for the mounting book. Those not chosen may now be discarded. When he discards the ones not wanted, the child feels very differently from the way he feels when the teacher orders the work brushed into the waste basket at the close of each lesson.

Simple Decoration:

By means of Waldcraft sticks or paper cutting, simple designs may be applied. To draw the straight lines as shown in Fig. 5, place the ruler or a strip of heavy paper on the envelope so one long edge coincides with one long edge of the envelope. Along the opposite edge draw the straight lines as shown in Fig. 5, using a wax

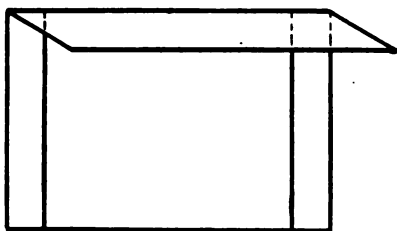


Fig. 4

crayon of the desired color. With the Waldcraft sticks and color pads print the squares as shown in Fig. 5. Squares of paper may be cut and pasted instead of using the dyes. With beginning pupils the applied art may be omitted.

Cutting From Object

It is often well to place an object where the pupils can see it and then have them cut. The idea is to have the pupils look at the object occasionally while cutting.

Cutting From Memory

The day following, remove the object and have the pupils cut from memory.

Have the pupils show by cutting or tearing something observed on their way to or from school. This will aid in cultivating the memory.

Cutting to Line

Purpose:

To provide for motor activity, skill, and seat work.

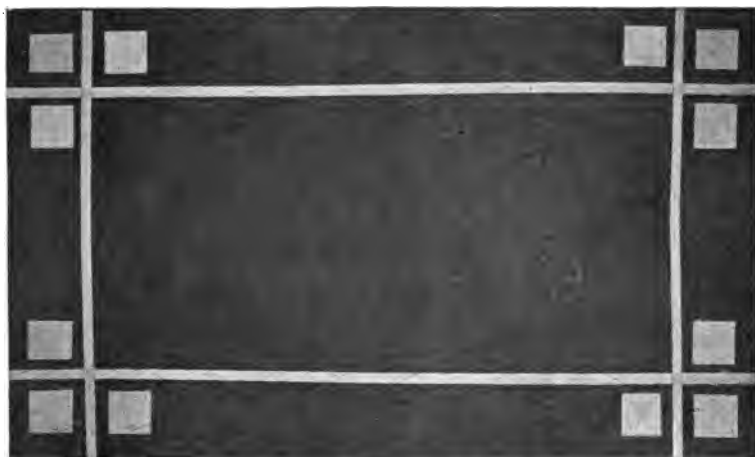


Fig. 5 Decorated Envelope.

Material:

Manila drawing paper.

Tools:

Hektograph, hektograph ink, and scissors.

It has already been suggested that the pupils be allowed to use the mass cutting as a pattern in obtaining outlines for line cutting.

It is not absolutely necessary that the teacher be an expert in drawing in order to prepare line cutting for children. There may be found in the market, animals, fruit, trees, and other forms in silhouette or outline. With a good set of these in the school, the work is very much simplified.

To prepare the above lesson, place a piece of carbon paper (black side down) upon a piece of glazed white paper. Upon this carbon paper place the silhouette form of a rabbit, or whatever form is desired. Trace the outer edge of the silhouette with a lead pencil (a pointed stick will do). Draw similar lines as shown by dotted lines (Fig. 6). Upon removing the silhouette form and the carbon paper, it will be found that the outline and all other lines traced are upon the glazed white paper. The outline upon the glazed white paper may now be traced with hektograph ink. When thoroughly dry, place the glazed paper (inked side down) upon the hektograph and smooth carefully with a cloth. In about a minute remove the glazed paper, and the outline and all other lines are upon the surface of the hektograph. The outline is now ready to be transferred to any kind

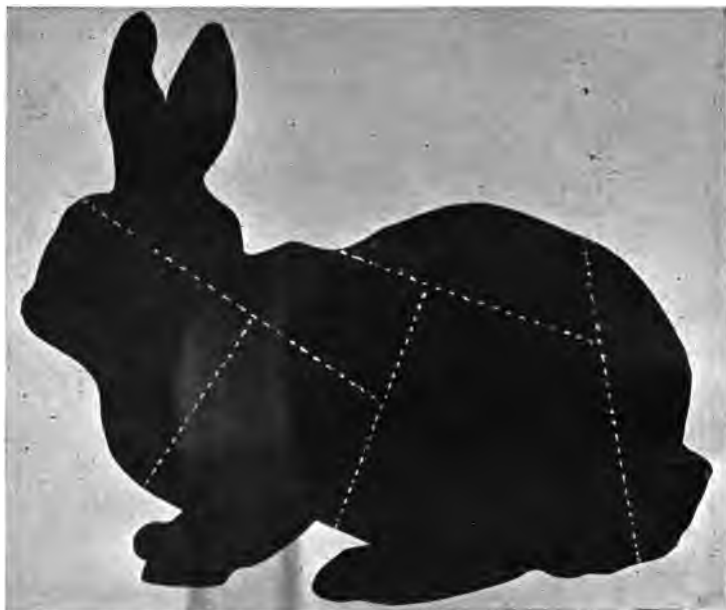


Fig. 6 Animal Silhouette.

of paper you may care to use—in this case, tinted construction paper.

Place the tinted construction paper, one sheet at a time, upon the hektograph, and rub gently. In this way the outline is transferred to as many sheets as may be desired. These in turn may be passed to the pupils, who will cut along the outline first, and then along all cross lines, thus dividing the silhouette into several pieces.

The Game

The pupils, during a long period when in their seats, may occupy their time in putting together the dissected parts to again form the animal. To care for these parts requires the construction of another envelope.

Envelope for Dissected Cuttings

Purpose:

- To provide a place for the dissected picture.
- To give the child educative employment at his desk.

Materials:

Fifty pieces of tinted construction paper 6x9 inches. One hundred pieces construction paper, $1\frac{1}{2}$ x3 inches.

Presentation:

Since the construction of this exercise is the same as that of the cutting envelope, only smaller, it might be well to furnish the pupils with the necessary materials, allowing them to construct independently.

Place first the parts of only one animal in the envelope, and permit the children to lay the parts to form the animal. Later, all the parts of two animals may be placed in the same envelope, and the children permitted to lay the pieces to form the animals.

Care of Seat Work

To aid in caring for seat work, number each envelope or box. Place the same number on each piece that is put into the box. When pieces are dropped on the floor by the children, it will be an easy matter to place each part in its proper box or envelope.

More Cutting to Line

Another interesting exercise in "Cutting to Line" may be had by furnishing each child with a pattern of the desired form and permitting him to place the pattern upon the paper. With a sharp pencil draw around it and then cut along the outline drawn.

Occasional lessons of this kind are very helpful to both teacher and pupils in the beginning work. To secure the patterns above mentioned, use the hektograph as already directed, and have the pupils of the second grade do the cutting. Later, when the pupils cut from objects or from imagination, they will often wish to duplicate a certain cutting by using the original one for a pattern.

To Make a Hektograph

If the school is not provided with a duplicator of some kind, the following is a good recipe for making a hektograph. The amount is sufficient to fill a pan 9x12 inches and $\frac{3}{4}$ inch deep:

2 ounces gelatine in sheets.

1 pint glycerine.

Put into double boiler and cook slowly for two hours. Pour into the pan and allow to cool. It takes about three hours to cool sufficiently to be in condition to use.

Wash off with a sponge and lukewarm water after using.

The copy should be written with hektograph ink on a paper having a smooth surface. Lay the copy, face down, and leave for about two minutes, smoothing it with a cloth. In making the duplicates the paper is smoothed over the surface and removed immediately.

Cutting From Object

It is often well to place an object where the pupils can see it and then have them cut. The idea is to have the pupils look at the object only occasionally while cutting.

Cutting From Memory

The day following, remove the object and have the pupils cut from memory.

Freehand Imaginative Cutting

Any of the objects suggested for mass or line cutting will furnish materials for freehand cutting lessons.

This phase of cutting grows largely out of the work in English. At the close of a story period, or at the end of a reading lesson, the children may be given an opportunity to express some part of the story in paper cutting or tearing. This, at first, is usually done in one piece. Later, the illustrative cuttings may be done in parts, and afterwards assembled in such a way as to make a pleasing arrangement. Such an exercise should be preceded by a group problem. To do this, select some story like "The Landing of the Pilgrims," Indian life, or even a barnyard scene. Any of the above offers a splendid opportunity for many cuttings. In the "Landing of the Pilgrims," all children cut trees. From experience, we know that some cut trees as large as the paper will allow, while others cut only very small ones. In building up the forest, all cuttings of trees may be used by placing the large ones in the foreground and the smaller ones in the background, thus giving, unconsciously, the first rules of perspective.

Criticism of one's own work is necessary for growth, and much attention should be given to correct form and proportion.

Box for Shoe Pegs

Purpose:

To hold colored shoe pegs to be used in connection with number and seat work.

Material:

One hundred 9-inch squares of tinted construction paper.

Presentation:

As in the case of the envelopes for the cuttings and the dissected pictures, the pupils will appreciate the absolute necessity of providing for the care of the shoe pegs. After a general discussion on the construction of such a box, pass to each child a 9-inch square of paper. Call attention to the shape of the paper. See Fig. 7. How

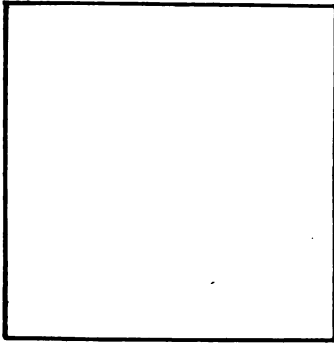


Fig. 7

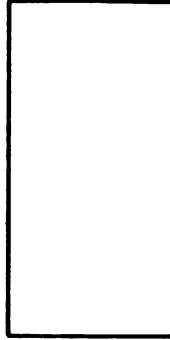


Fig. 8

many corners has it? How many edges has the square? What can you say of their length? (All the same length.)

In order that the box shall be a trifle smaller than the cover, have the pupils cut from two edges of the square a narrow strip about $\frac{1}{8}$ -inch wide. The paper remains practically a square, or pass the pupils squares that measure $8\frac{1}{8}$ inches.

For convenience, name the edges right and left, upper and lower, or front and back. Have pupils point to the right edge, left edge, front edge and back edge.

Hold the square by the right and left edges. Fold the paper so these edges exactly meet, and crease. Fig. 8. What is the shape of your paper now? Fig. 8—oblong. How many corners has it? How many edges? Are the edges of the oblong all the same length? Open the paper. Fig. 9. How many oblongs are there in the open paper? What part of the square is each oblong? Find the crease made by folding. Fold the right edge of the paper to the crease.

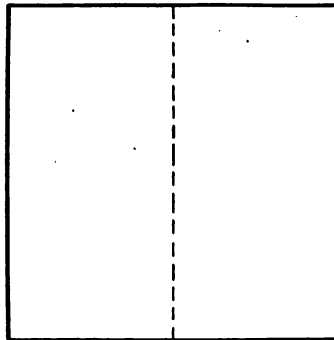


Fig. 9

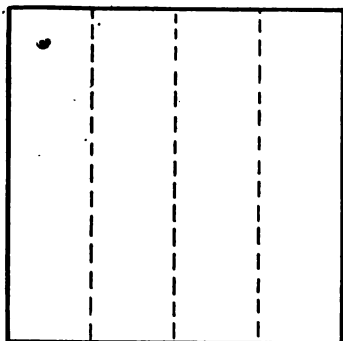


Fig 10

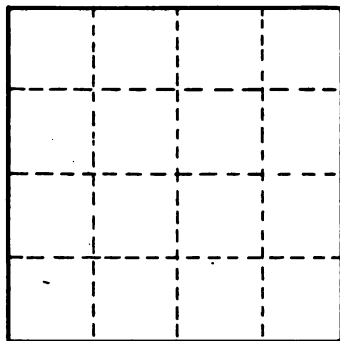


Fig 11

Fold the left side so that it will look like the right side. Unfold. How many oblongs are there now? Fig. 10. Hold the paper so the crease runs from right to left and fold again as above. (See Fig. 11.)

Since the other boxes are to be constructed, it will not be necessary to attempt to develop all the number work which may be given out of such a construction lesson.

It will be remembered that all dotted lines indicate creases, while the continuous lines should be cut.

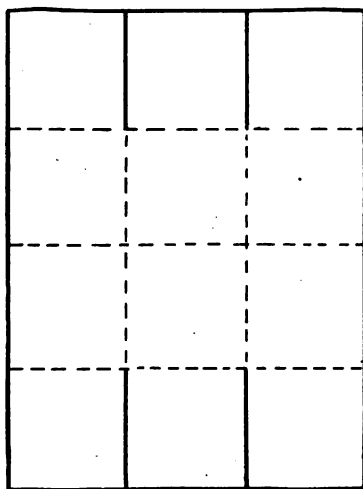


Fig 12

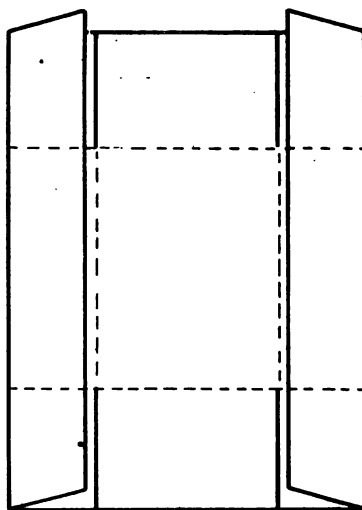


Fig 13

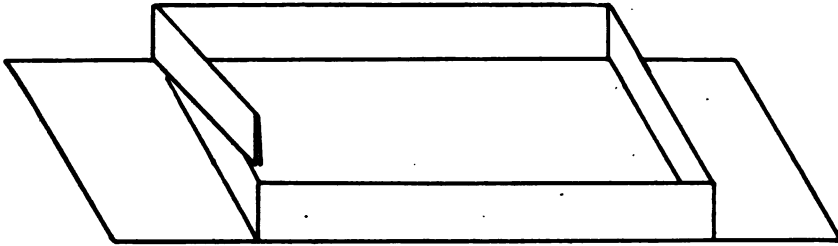


Fig 14

Cut away one row of squares, as indicated in Fig. 12. How many squares are left? Fold right and left edges into the creases. Fig. 13. The ends of the box have double foldings. Slip one within the other, as shown in Fig. 14. The end square as shown in Fig. 14 is now folded over the already double end to the inside of box, thus making it strong and suitable for various kinds of materials to be used in seat work. Library paste will greatly aid in strengthening the box.

Cover for Box

The cover for the box is constructed the same as the box, except that the full 9-inch square is used.

Provide each child with another 9-inch square of tinted construction paper, permitting him to fold as in previous exercise, without any directions. As a convenience in removing the cover, cut a small triangle from each of the long sides. Fig. 15.

Do not over-direct the work, but give the child every possible opportunity to help himself.

The above exercise results in a very substantial box, which may be used to hold colored pegs.

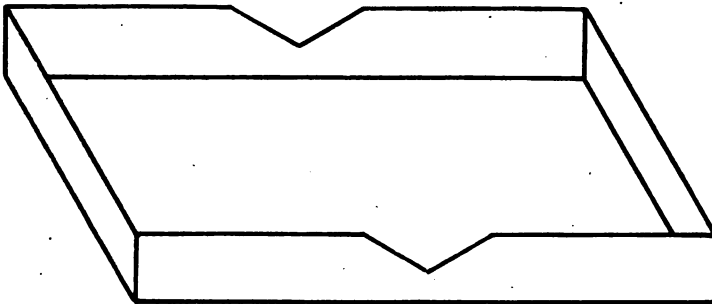


Fig 15

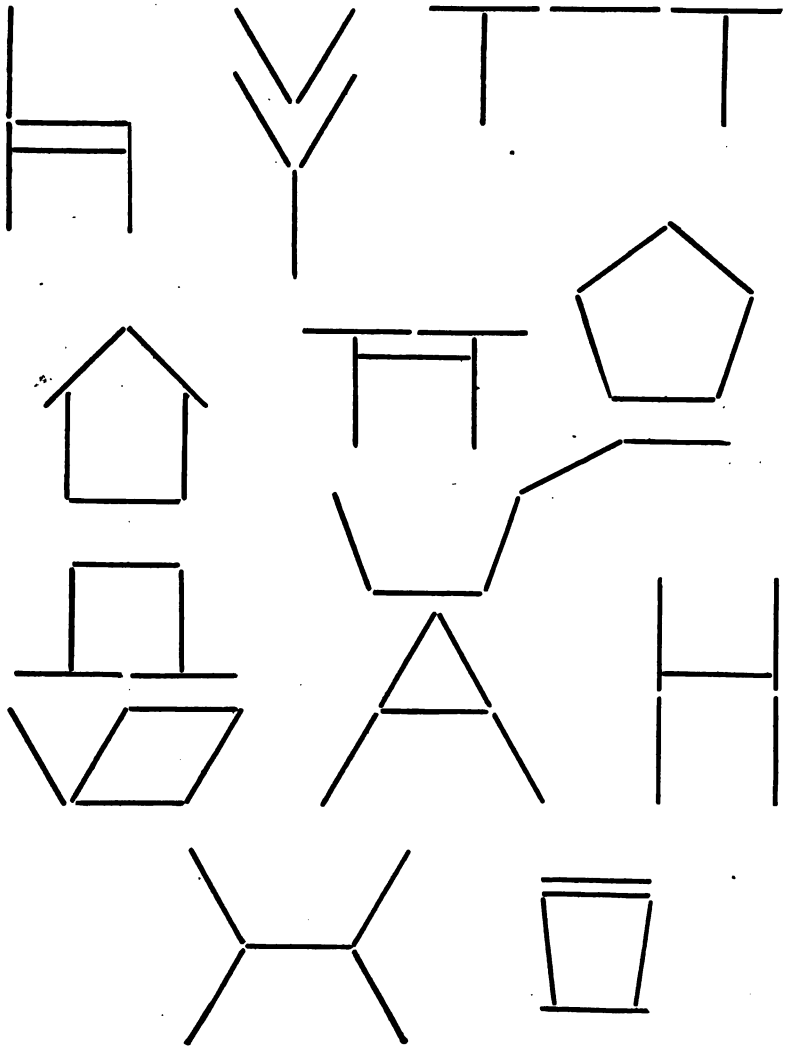


Plate 4 Outlines for Shoe Pegs.

Suggestions for the Use of Pegs

1. Assort as to color or size.
2. Count by laying one in the first row, two in the next, three in the third, and so on.
 1
 1 1
 1 1 1
 1 1 1 1—etc.
3. Lay in twos, threes, or fours, etc. This leads the pupils to count by twos, threes and fours.
 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1
4. Lay a certain number of rows with the same number in each row; as, four rows with four in each row.
 1 1 1 1
 1 1 1 1
 1 1 1 1
 1 1 1 1
5. Lay all the combinations of each number; as, for five:
 1 1 1 1 1
 1 1 1 1 1
 1 1 1 1 1
 1 1 1 1 1
 1 1 1 1 1
6. Develop the multiplication table of the twos or threes by laying the pegs as shown below.
 1 1
 1 1 1 1
 1 1 1 1 1 1
 1 1 1 1 1 1 1 1—etc.
 1 1 1
 1 1 1 1 1 1
 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1—etc.
7. Lay solid rectangles by putting a given number of pegs in each rectangle.
8. Make combinations by laying a rectangle of one number and another rectangle of the other number.
9. Lay as many different objects as possible with a given number of pegs. With five pegs the following objects may be outlined. See Plate 4.
10. For threes lay the pegs in triangles.
11. For fours, fives and sixes lay squares, pentagons and hexagons.

Materials for September:

All educative seat work tinted construction paper, etc., may be purchased from a first class kindergarten supply house.

No one teacher is expected to construct all the problems suggested for any one month.

Order only the material for problems which are to be constructed.

Cutting Sheets 50—Vegetable cutting sheets. Plate 1.
 50—Animals and birds cutting sheets. Plate 2.
 50—Animals and birds cutting sheets. Plate 3.

Cutting Envelope—1 pkg. 9x12-inch tinted construction paper.

Dissected Pictures—1 pkg. of 9x12-inch construction paper.

Envelope for Dissected Pictures—1 pkg. 6x9-inch tinted construction paper.

Box for Shoe Pegs—1 pkg. 9x12-inch construction paper. Shoe Pegs
—3 boxes.

OCTOBER

Cutting

Continue cutting from memory and imagination, relating this phase of the work to the English and story study.

Cutting to Line

Jack-o'-lanterns, cats, witches, bats, and other cuttings relating to Hallowe'en.

Purpose:

To teach the pupils that cutting is a mode of expression, and that each cutting tells a story.

To make cuttings for schoolroom decoration for the month of October.

To develop the imagination.

To train the hand, eye and brain to work in unison.

Clay

Use composition clay freely. Encourage pupils to work with one piece. For example: If the pupil wishes to model a horse, begin with a piece of clay large enough to make the whole animal, the head, legs and tail being drawn from the original piece. So often small pieces are taken from the large piece, rolled into cylinders, and stuck on to the body for legs. If the pupils are permitted to work in this way, it leads to bad habits which makes trouble in the upper grades when handles or feet are to be added to various pottery forms.

Box for Picture Number Cards

Purpose:

To make number concrete.

To provide a way for counting and associating the symbol with the number for which it stands.

Material:

One hundred 6-inch squares of construction paper.

Library paste.

Presentation:

An informal talk should precede the construction of the box. The pupils have the cards before them. Should the box be large? Why? Should it be very small? Why? Show, by using your hands, how long the box ought to be. How wide should it be? How deep?

As this is only the second box the pupils have constructed, the teacher should review very carefully the number work developed in the construction of the first box, adding just a few new points.

Pass to each pupil a 6-inch square. Call attention to the edges. How many? Are the edges all the same length? How many corners has the square?

Fold right and left edges together. What shape is the paper? (Oblong.) How many edges has it?

Lead the pupils to see that the oblong has two long edges and two short edges.

The edges of the square are equal in length.

Unfold. How many oblongs in the square? Each oblong is what part of the square? Fold the right and left edges in to center crease. Unfold. Into how many parts is the paper now divided? It is just a little too early to develop fourths.

Hold the paper so the creases run from right to left.

Fold right and left edges together. How many rectangles are there on one side? Unfold. How many rectangles altogether? How many rectangles in one row? How many in two rows? Fold the right edge into center crease. How many squares may be seen?

Unfold. How many squares may now be seen?

How many squares in one row?

How many squares in two rows?

How many more squares in the right half than rectangles in the left half?

How many squares in one row? In two rows? In three rows? In four rows?

To finish the box, cut away one row of four squares. How many squares are left?

Proceed to finish the box as suggested for the box for shoe pegs in the outline for September, remembering to cut, freehand, from two edges of the square from which the box is to be constructed, narrow strips not more than one-quarter inch wide. The square used in the construction of the cover remains the full 6-inch square.

Hektograph pictures in groups and the figures corresponding to the number of objects in the group beside it. These cards may be had in the market already prepared at a very small cost. Cut the sheet into separate cards, leaving the number attached to the group. See Fig. 16.

In the first lesson, allow the pupils to match the one with one, two with two, etc.

Cut apart, leaving the pictures on the one card and the figure on another.

Lay on the desk, matching the figure with the group for which it stands.

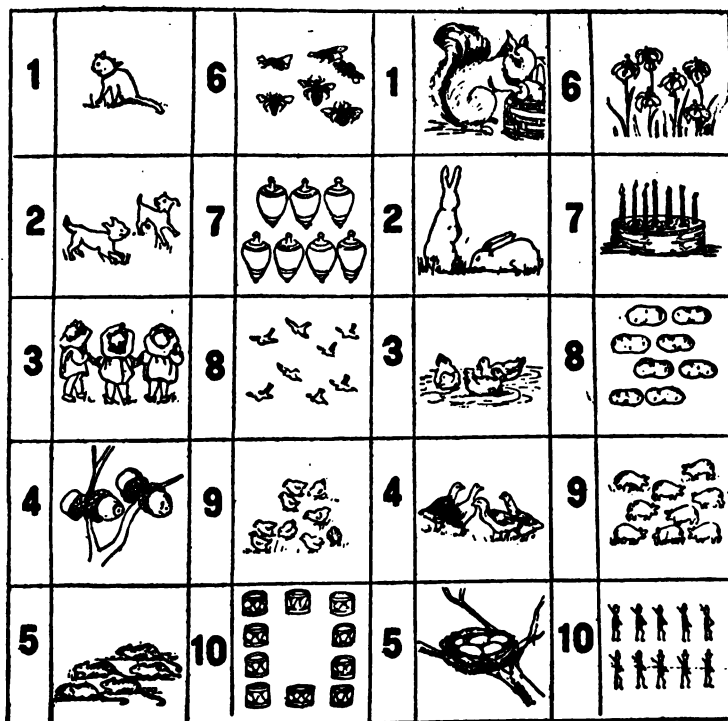


Fig. 16 Picture Number Card.

The figures may be used by laying sticks or other counting material in groups containing the same number as those on the cards.

Sticks may be laid to show a different combination in each group.

Two combinations can be made for 4: 2 and 2; 3 and 1.

Four combinations can be made for 8: 7 and 1; 6 and 2; 5 and 3; 4 and 4.

The Ruler as a Straight Edge Peg Board

Purpose:

To begin to use the ruler as a straight edge.
To teach neatness.

Material:

One sheet of construction paper 7x5 inches.

Tools:

Ruler and pencil.

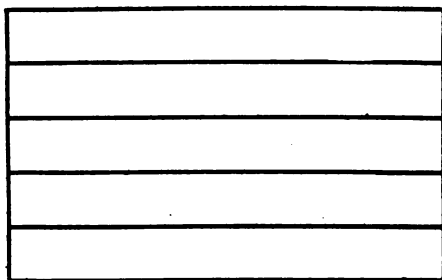


Fig 17

Presentation:

Provide each child with a piece of drawing paper 7x5 inches. Place the ruler so one long edge coincides with one long edge of the paper, and draw a line along the opposite edge of the ruler. Remove the ruler and place one long edge so it coincides with the line just drawn, and draw along opposite edge. Continue in this way until the opposite edge of paper is reached. (Fig. 17.)

Turn the paper and place the ruler so one long edge coincides with one short edge of the paper, and draw a line along the opposite edge of ruler. Remove ruler and place so one long edge coincides with line just drawn, and draw along opposite edge of ruler. Continue in this way until lower edge of paper is reached. (Fig. 18.)

This divides the paper, 7x5 inches, into squares. It will be observed that nothing has been said about inches.

A few questions like the following will aid the pupils in their counting:

How many squares in the first row along the short edge?

How many squares in two rows along the short edge?

How many squares in the first row along the long edge?

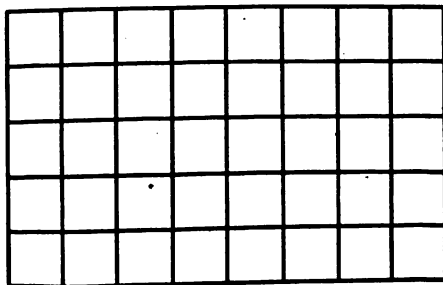


Fig 18

How many squares in one long row and one short row?
How many squares half way around the paper?

Use of Board

With the board and pegs on each child's desk, have the pupils place two yellow pegs in each square in the top row.

Place three blue pegs in each square in the second row.

Place four red pegs in each square in the third row.

This may be varied in many different ways.

Envelope for Peg Board

Purpose:

To hold the peg board.

To teach order and system in making a place for everything and by having everything in its place.

To use the ruler as a straight edge.

Material:

9-inch x 12-inch tinted construction paper and paste.

Tools:

Scissors and ruler.

In the construction of previous envelopes, no provision was made to make the paste flap a part of the original piece of paper. Extra strips were cut and pasted over edges.

The new step in the present construction is the planning for the paste flap. Allow the pupils to suggest a way in which this might be done.

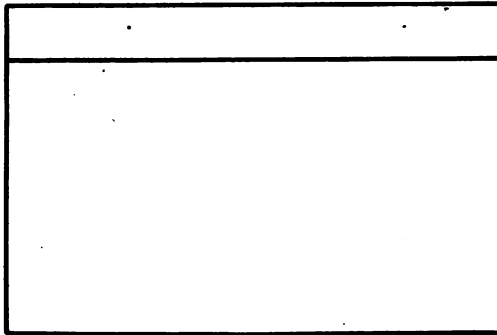


FIG. 19

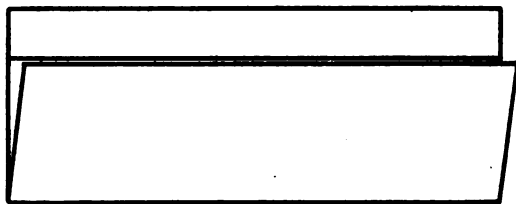


FIG 20

To Construct the Envelope:

Pass to each pupil a piece of 9x12-inch construction paper. Place the ruler along one short edge of the paper, and draw a line as far from the edge as the ruler is wide. Fig. 19. Fold the opposite edge of the paper to the line just drawn. Fig. 20.

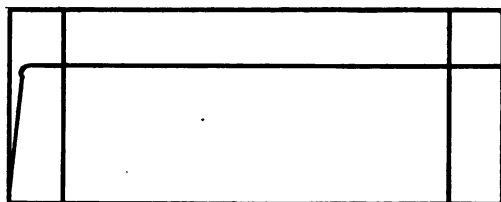


FIG 21

Instead of closing the edges by pasting extra strips, as in the case of the cutting envelope, place the ruler so one long edge coincides with one open edge of the envelope, and draw a line along the opposite edge of the ruler. Fig. 21. Cut along the line just drawn, being careful to cut only the top part of the envelope and the corner out of the flap, as shown in Fig. 22. The under side of the envelope now extends beyond the upper side. Fig. 22. Place the ruler along opposite edge of envelope, drawing and cutting.

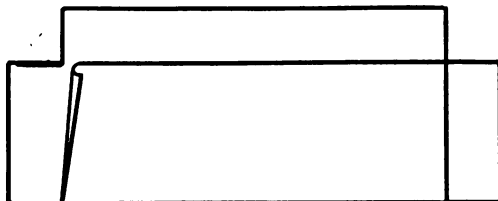


FIG 22

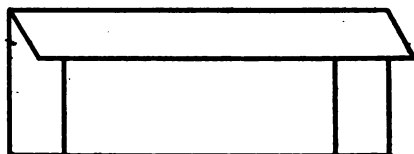


FIG 23

Paste is applied to the flaps and creased over on to the upper side of envelope, as shown in Fig. 23. Cut away a small triangle from lower edge of the flap as shown in Fig. 23. This gives the envelope a neater appearance.

Fig. 24 shows the completed envelope to which straight lines and circles have been added as decoration.

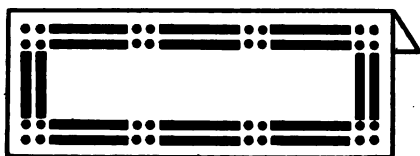


FIG 24

Envelope for Matching Number Game

Purpose:

- To review the construction of the envelope given in September.
- To provide an opportunity for the pupils to recognize the same number in other forms.
- To aid in the caring for seat work.

Material:

- 6x9-inch construction paper.

Tools:

- Scissors and ruler.

Presentation:

Review the construction of the envelope made for the peg board and then pass to the pupils 6x9-inch pieces of construction paper, asking them to construct envelopes for the matching number cards.

The Game

Fig. 25 shows a matching number card, such as should be provided for each pupil of the room. This gives to each pupil 60 small



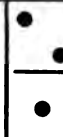



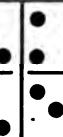
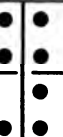
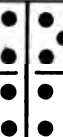



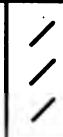

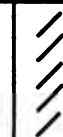
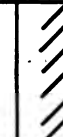


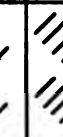

									
									
One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten
1	2	3	4	5	6	7	8	9	10
I	II	III	IV	V	VI	VII	VIII	IX	X

Fig. 25 Number Matching Game.

cards when cut apart. In order that the pupils may readily understand the game, it would be well for the teacher to make one large set, making each card about 4x8 inches. These large cards are passed, one to each pupil.

A child stands before the class and shows his card. All children who have the same number in other forms come to the front and stand beside the first child and show their cards to the class. When the pupils understand the game, the small set which is provided for each child is cut and placed in the envelope. These may be used very profitably for a number of seat work periods. The game is played by each child with the small cards in the same way as the whole room played the game with the large cards. Find "one" in any form and place it at the top of the desk and then find "one" in every other form and place beside it.



FIG 26

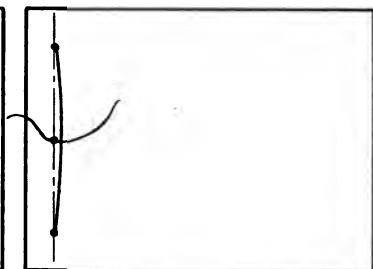


FIG 27

Cutting Book

Purpose:

To provide a place for best cuttings which have been kept up to this time in the cutting envelope.

To give pupils an idea of the construction of a very elementary book.

Material:

9x12-inch manila drawing paper.

Tinted construction paper.

Eyelets.

Macrame twine.

Presentation:

Much enthusiasm for the construction of the book has already been created by the teacher talking about the cuttings. The pupils have the desire to preserve the best cuttings. The real necessity for the book has already been created.

It will be necessary for the teacher or several of the older pupils to punch the holes in the leaves and covers of the book. This is not so great a task, as all the leaves and covers for a book may be punched at one time.

Place the eight leaves and the two colored pieces of tinted construction paper in a pile. Punch the pack at the center of the back along one short edge about one-half or three-quarters of an inch from the edge. About three and one-half inches above and below this hole punch others.

The eyelets are placed in the tinted covers only. A combination eyelet punch and set will do the work.

Cut the macrame twine into pieces twenty inches long. Allow each pupil to tie his own pages together. Pull the twine through the center hole first. Draw all but $2\frac{1}{2}$ or 3 inches through the hole.



Fig. 27A Cuttings Mounted in Book.

See Fig. 26. If all the leaves cannot be held at one time, place the twine through a part at a time until all have been strung.

Bring the twine from the under side up through the hole which is above the center. Then make a long stitch from the upper to the lower hole. Allow the end now to come up through the center. There are now two ends, one on each side of the long stitch. Fig. 27. With these two ends, tie a hard knot over the long stitch. This completes the book, and it is ready to receive the cuttings. Fig. 27A. The mounting will occupy several periods of construction work.

Clay Box

Purpose:

- To introduce an opportunity of meeting a new condition.
- To aid in keeping number concrete.
- To continue to use the work as a basis for oral language.

Material:

- 9-inch squares of construction paper.
- Pieces of manila paper cut to fit the bottom of the boxes, and the other the tops of the cover.
- Library paste.

Tools:

- Ruler and scissors.

Presentation:

In the construction of previous boxes, it was not necessary to consider a double thickness for the bottom of the box and for the top of the cover. On account of the oily condition of the clay it is necessary to consider even more than a double thickness; so in addition,

an extra piece of paper (manila document) is placed between the two sheets forming the bottom of the box and top of cover.

Talk over with the class in an informal way the new conditions to be met in the construction of the clay box. Should the box be larger than any of those already constructed? Should it be stronger? Why? Why is it necessary to have the bottom thicker than in the other boxes?

To Construct the Box:

From the 9x12-inch pieces of construction paper, cut 9-inch squares. From two edges of the squares used for the box construction, cut a narrow strip, freehand, no more than a quarter of an inch wide. This makes the box, when finished, just a trifle smaller than the cover.

Fold the square into sixteen small squares, emphasizing the number in the process of folding.

Cut squares from two corners, as shown in Fig. 28. Cut on continuous lines.

To fold into box form, fold the edge "a-b" to meet "c-d" and crease well. This is done the same as in the previous exercises.

Next fold "e-f," so it meets "g-h." In doing this, the rectangle "i" is carried with it, and fits over the bottom of the box "j."

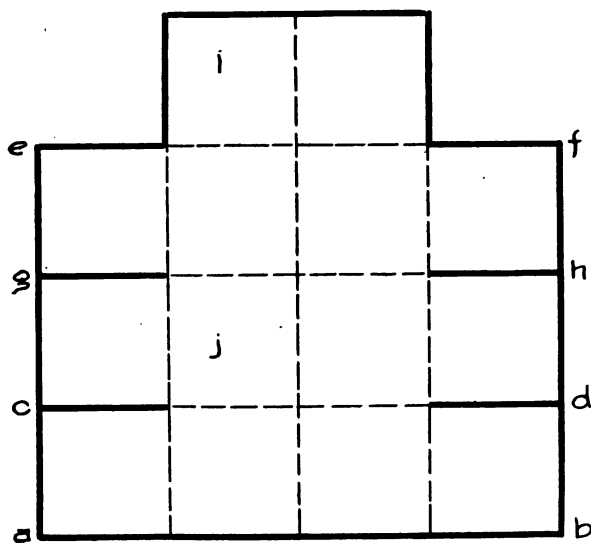


FIG 28

The remainder of the box construction is the same as in previous box construction.

With the paper cutter, cut small rectangles of manila document paper, and lay between the two parts of the bottom. Use paste to keep the various parts together.

Construction of Cover:

Fold the same as in construction of box, but do not cut narrow strips from the original square, as the cover should be a trifle larger to provide for easy removal.

Place a rectangular piece of manila document paper on top of cover, as suggested for the box.

Lanterns

Purpose:

To decorate the schoolroom for Hallowe'en.

To give freedom in the use of scissors.

To give pupils choice in colors.

To use the ruler as a straight edge.

Material:

6x9-inch tinted construction paper.

Library paste.

Presentation:

The cutting to line and the imaginative cuttings are to be used in schoolroom decoration. To add to the decorative interest, the lanterns may be introduced, asking the pupils to suggest the size, color, construction, and where they may be hung.

A simple lantern for decorative purposes may be constructed as follows:

Place a 6x9-inch piece of construction paper on the desk so that the long edges are parallel with the front edge of the desk. Place the ruler along each long edge, and draw lines as far from the edges as the ruler is wide. Fig. 29. A half-inch strip of cardboard may be used instead of the ruler.

Fold the long edges together. Fig. 30.

With the scissors, cut through the long edge along the dotted lines shown in Fig. 31, to the lead pencil line. The pupils are not to draw the dotted lines to guide them, but to cut freehand, judging the distance. These strips are about one-quarter inch wide. Cut away the last strip as shown in Fig. 31.

Unfold the paper (see Fig. 32). Put paste on the extended bands, and paste top and bottom in to circle. Fig. 33. With a string or

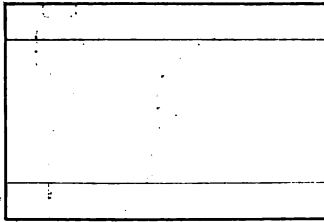


FIG 29

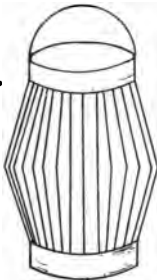


FIG 33

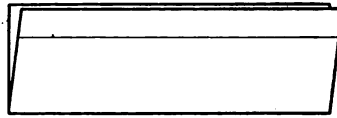


FIG 30

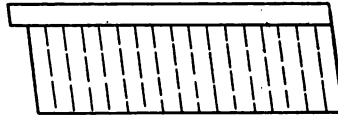


FIG 31

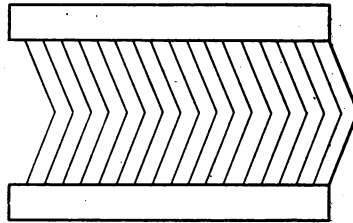


FIG 32

paper handle, these lanterns of various colors make very pretty decorations for a primary room.

By this time a quantity of small pieces of paper has accumulated.

Pass pieces of various sizes and colors to pupils as they finish the regular problem, asking them to construct other problems without direction.

Alphabet Book

Purpose:

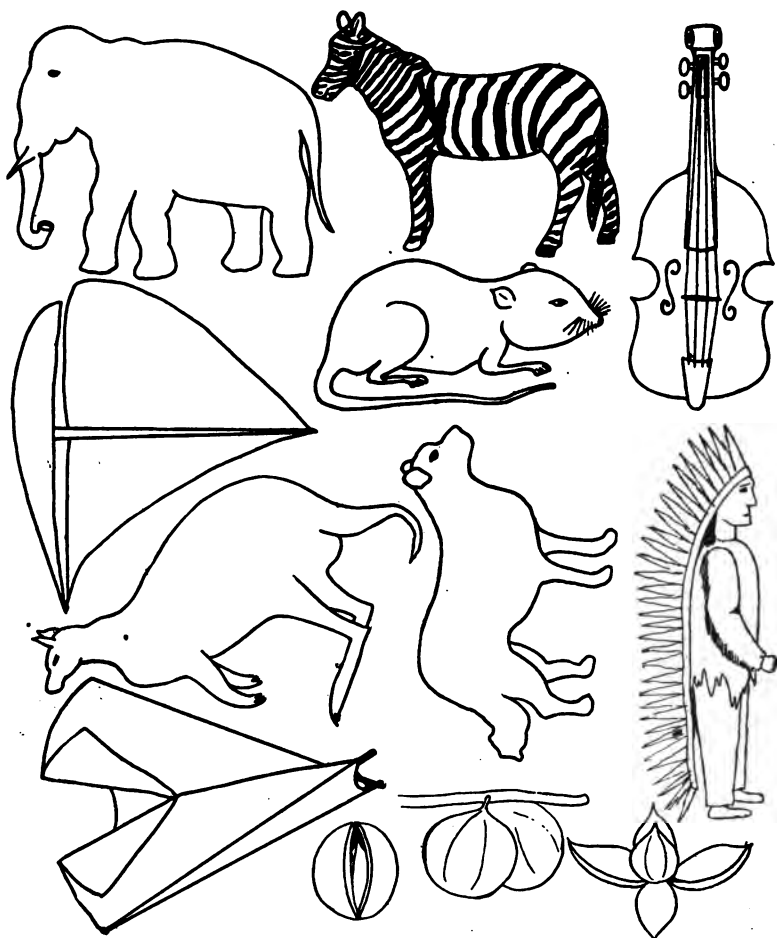
- To familiarize the child with the alphabet.
- To plan for systematic cutting and pasting.

Material:

- 9x12-inch manila drawing paper.
- Tinted construction paper.
- Carpet warp, macrame twine, candle wicking or jute for tying.
- Coarse darning needles (may be borrowed from some other grade).
- Sheets of small and capital alphabet. Fig. 34B.
- Alphabet cutting sheets, Figs. 34 and 34A.

Presentation:

Before beginning the construction of any problem with the class, the teacher should have a finished exercise that she did. She thus becomes familiar with any little difficulty that might arise with the child. It also makes her more appreciative of the child's efforts. With a finished book to show the pupils, the construction may begin.



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Fig. 34 Alphabet Cutting Sheet.

Construction of Book:

Fold each sheet of drawing paper into halves by bringing the short edges together.

Place one sheet within the other, the tinted sheet on the outside of all.

With the darning needle, make a hole on the crease down the center, about two inches from the top, and another about two inches from the bottom.



Fig. 34A Alphabet Cutting Sheet.

With the needle threaded, bring it from the outside through the hole at the top and then from the inside through the hole near the bottom. With the two ends on the outside, tie a hard knot and then a bow knot.

How to Use the Book:

Each pupil is provided with the alphabet in both small and capital letters, Fig. 34B.

Cut on the dividing lines. On a page of the book paste a small

A	a	B	b	C	c
D	d	E	e	F	f
G	g	H	h	I	i
J	j	K	k	L	l
M	m	N	n	O	o
P	p	Q	q	R	r
S	s	T	t	U	u
V	v	W	w	X	x
Y	y	Z	z		

Fig. 34B Alphabet Sheets.

"s" and a capital "S," one in the upper right hand corner and the other in the upper left hand corner. Leave a suitable margin.

From the kraft writing paper, cut or tear something that begins with "S."

On the next page place the letter "T," cutting something that begins with "T," and paste. In this way take each letter of the alphabet. Fig. 34C.

If the teacher so desires she may use the alphabet as shown in Fig. 34D. In this case the pupil folds and cuts his own alphabet.

It will take some time to complete the problem, but there is some satisfaction in the finished product, because each child's efforts have been placed in permanent form.

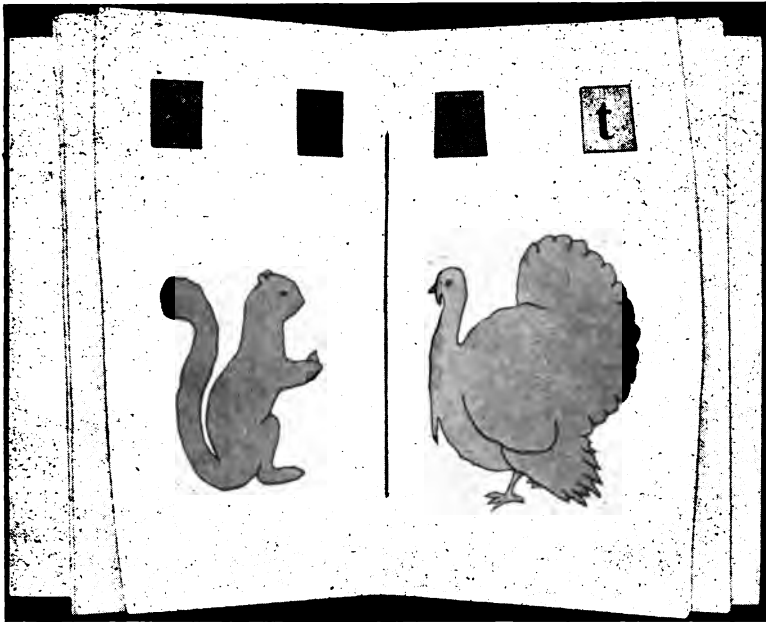


Fig. 34C Alphabet and Cuttings Mounted in Book.

Material for October:

Number Box—1 pkg. 6x9-inch tinted construction paper.

$\frac{1}{2}$ pint jar of paste.

1 set of rulers, marked off in inches only.

Peg Board—1 pkg. 6x9-inch tinted construction paper.

Envelope for Peg Board—1 pkg. 9x12-inch tinted construction paper.

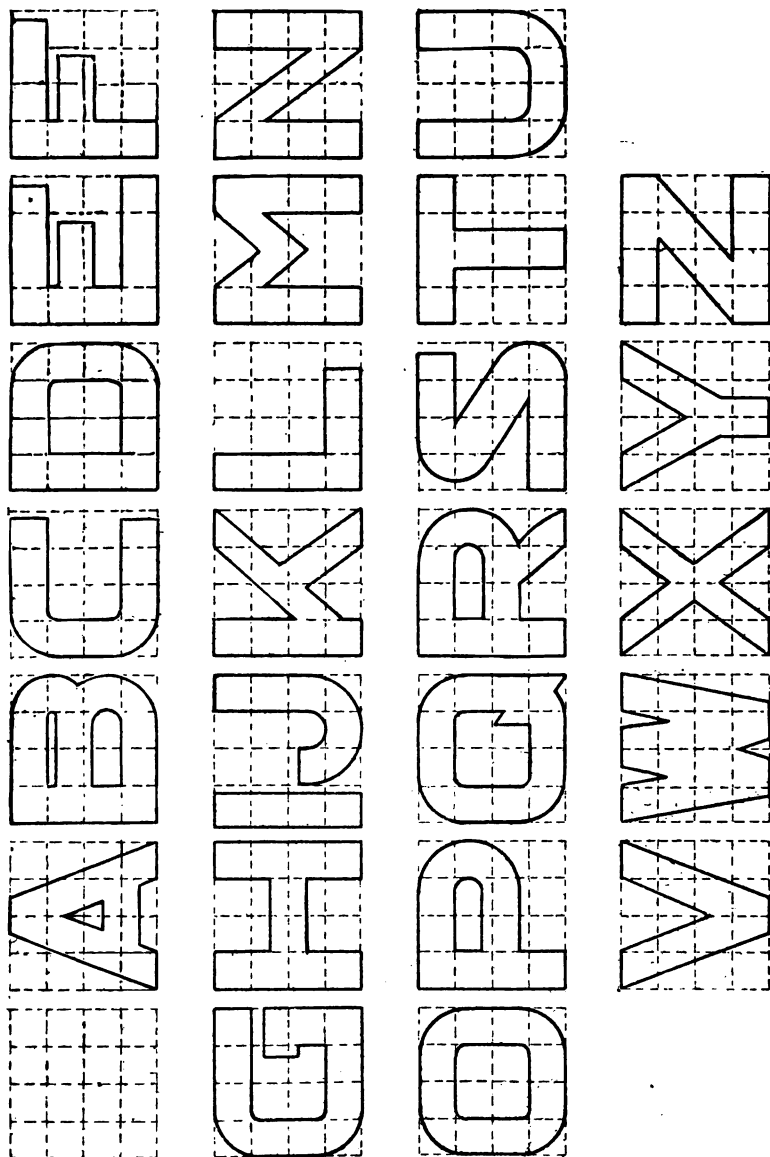


Fig. 34D Freehand Alphabet.

Matching Number Game—1 pkg. of numbered sheets.

Envelope for Matching Number Game—1 pkg. 6x9-inch tinted construction paper.

Cutting Book—3 pkgs. Manila drawing paper.

1 box eyelets.

1 ball macrame cord.

1 pkg. tinted construction paper.

Clay Box—1 pkg. 9x12-inch tinted construction paper.

Lanterns—1 pkg. 6x9-inch tinted construction paper.

Alphabet—4 pkgs. 9x12-inch manila drawing paper.

1 pkg. 9x12-inch tinted construction paper.

50 alphabet cutting sheets. Fig. 34.

50 alphabet cutting sheets. Fig. 34A.

50 alphabet sheets on kraft paper. Fig. 34B.

NOVEMBER

The work for this month naturally centers around the history of the first English settlers. In a general way, their wanderings and the reasons for the same are gone over in the first three or four grades. The work is rich in offering opportunities for the construction in all grades. It will not be necessary for any one of the first four grades to duplicate the work of another.

Cuttings

Continue cutting from memory and imagination: Puritan men and women, churches, houses, trees, turkeys, canoes, wigwams, boats, windmills and Indians.

Clay Modeling

Model such forms as will aid in building a colonial scene—Puritan men and women, Indians, animals, etc.

Purpose:

To emphasize the history connected with the early colonial times.

To give the pupils an opportunity to use cutting and modeling as a mode of expression.

The following make interesting group problems: Plymouth; the Indian; England, and Holland and our own country as it appeared to early settlers.

For the first grade "B" class, a group problem made up of a combination of drawing and cutting of an Indian village affords excellent opportunity for freehand cuttings. The teacher may place on the board or on a large sheet of paper a drawing of a forest along the shores of a lake. The pupils may cut and decorate the wigwams and canoes. These are pasted in appropriate places on the drawing. Cut Indians in action and in repose, and paste. Cut animals and birds.

In the advanced first grade, Plymouth may be built on the sand table, using the folded houses suggested in the outline. Ordinary drawing paper, colored with blue crayon and placed under a piece of glass, makes a good representation for water. Sawdust soaked in a pail of green dye may be used for grass. If there is no opportunity for pupils to get twigs to be used for trees, paper trees may be cut as suggested in the outline.

The folding and cutting combined with the modeling make it possible to build most interesting panoramas on the sand table.

Boat With Sails

There will be no difficulty in interesting the pupils in the construction of anything pertaining to Thanksgiving. November is one of the richest months of the year for construction work.

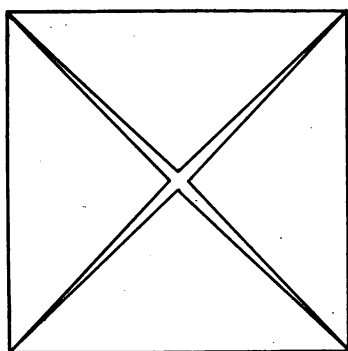


FIG. 35

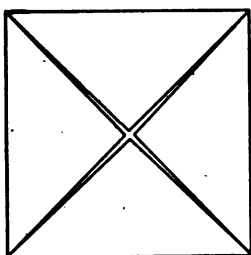


FIG. 36

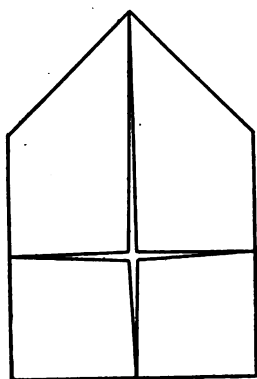


FIG. 37

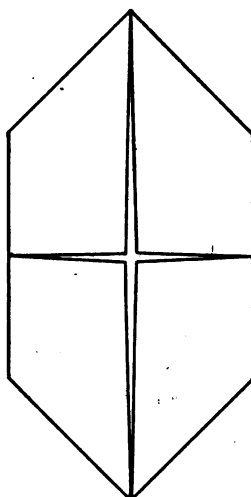


FIG. 38

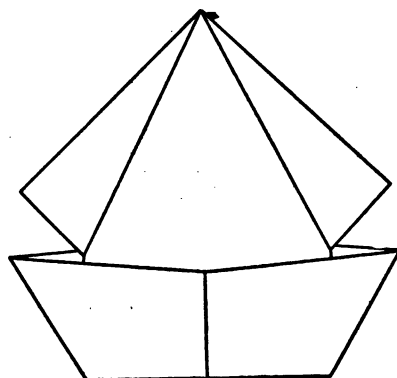


FIG. 39

Purpose:

To make as real as possible the history of early colonial times.

To make it possible for the pupils to continue the related number work.

To give the pupils an opportunity to express themselves in good English, in telling about and answering questions pertaining to the construction of the problem at hand.

Material:

A 9-inch square of construction paper.

Presentation:

Present to the class the finished folding of the boat. Pass to each pupil a 9-inch square of manila drawing paper.

Fold the diagonals of the square as shown in Fig. 35.

Fold each corner to the center where the diagonals cross.

When the four corners are folded to center, we have Fig. 36.

Reverse the paper so that the closed side is next to you. Fold three corners to the center. Reverse the paper again, holding it so that the unfolded corner points up. Fig. 37. Unfold the lower corner, letting it point downward. Fig. 38.

You will see four corners meeting in the center of the paper. Take hold of the lower two of these corners. Pull them forward and sideward until the corner of the paper which pointed down is drawn up to the center. The lower part of the folding will now assume a boat shape.

Crease along the right and left edges. There are still two corners left at the center of the paper. Fold each of these corners outward, making a crease which runs from the edge of the boat to the upper corner of the paper. The triangles thus formed make the sails.

Fig. 39 shows finished boat.

Color the hull of the boat, leaving the sails the original color of the paper.

By this time a considerable amount of small pieces of paper has accumulated from various exercises. Pass to each child smaller squares, allowing them to construct other boats without assistance.

Log House

The houses constructed by the pupils may be grouped, making an interesting colonial village.

Purpose:

To add to the interest of colonial history.

To offer opportunity to continue laying the foundation for formal work through the development of constructive number.

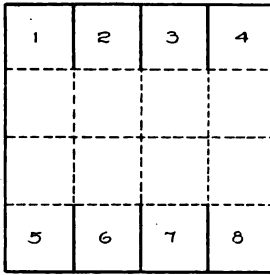


FIG 40

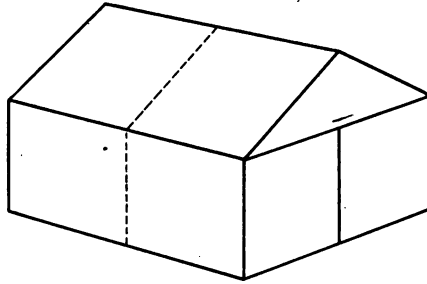


FIG 41

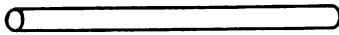


FIG 42



FIG 43

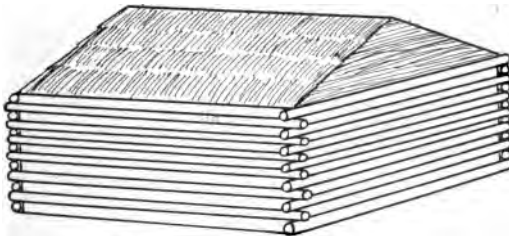


FIG 44

Material:

- One 9-inch square of construction paper.
- One sheet of number paper, 6x9 inches.

Presentation:

The pupils have already been told about the felling of trees and the handling of logs in the construction of the first houses. Their interest in the subject makes it possible to construct the little play house which has the appearance of a log house.

Let the pupils understand that the plan is to build up a village of log houses, and that each house constructed is to be placed somewhere in the village.

Fig. 40 shows the folding of a 9-inch square for a house. Do not fail to review all previous number work, developing as many new combinations as is good for the pupils. Cut on continuous lines. Lay square 2 of both front and back rows so it covers square 3, and paste.

Fold squares 1 and 4 so that the cut edges overlap horizontally. Fig. 41.

Ask pupils to suggest ways of making logs.

A good way to make logs is to take a strip of number paper a little longer than the house and about two inches wide. Roll this strip lengthwise around a lead pencil. Paste is applied to the strip of paper before removing the pencil.

The number paper is used instead of the manila drawing paper, because it is easily pasted. The drawing paper is stiff and refuses to stay when rolled around the pencil and pasted.

To give the appearance of a log the strips of paper may be colored with crayon or water color before rolling and pasting.

These tubes (Fig. 42) are now pasted to the sides and the ends of the house as shown in Fig. 44.

Strips of paper one inch wide and as long as the roof, may be slashed into fringe-like ends (Fig. 43) and pasted on to the roof, one over the other, giving the effect of a thatched roof (Fig. 44). Color the strips before slashing.

Cradle

This is a very simple construction, but of great interest to the pupils.

Purpose:

To give the children an idea of the crude cradle constructed in the early colonial days.

To give opportunity to use good English in telling about the construction of the cradle.

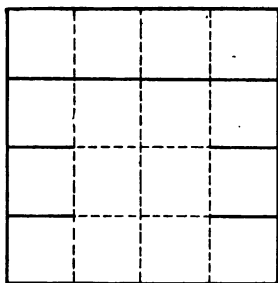


FIG. 45

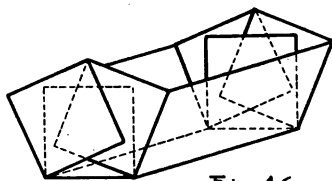


FIG. 46

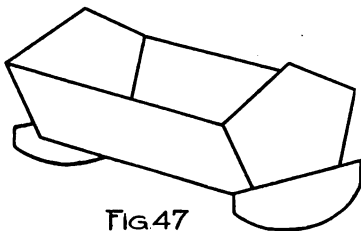


FIG. 47



FIG. 48

Material:

A 9-inch square of construction paper.

Presentation:

Every first-grade teacher knows the joy that comes to a child of the first grade when given an opportunity to construct anything relating to play. Fig. 45 shows folding for cradle.

Cut on continuous lines. Fold and paste as shown in Figs. 46 and 47. Use the row of squares cut away to make rockers for cradle.

Fold squares cut away as shown in Fig. 48 and cut as indicated by curved line. Paste rockers to ends of box part of cradle as shown in Fig. 47.

Review the number work in the construction of the cradle, calling attention to halves and quarters.

After one row of squares has been cut away, a short exercise might be given in combining or counting by threes.

Construction of Church

The church is to be used in the Thanksgiving work and in the little village built up on the sand table.

It is made of the pyramid, the square prism and the house, as shown in Figs. 41, 49 and 50.

Purpose:

To emphasize the Thanksgiving work, and to familiarize the pupils with the square prism and the square pyramid.

To begin to lay the foundation for the furniture for the doll house.

Material for Square Prism:

One 8-inch square of manila drawing, or tinted construction paper.

Presentation:

To make the square prism, fold the square into sixteen small squares. Cut away one row of squares and along other continuous lines, as shown in Fig. 45. Fold squares at ends and paste.

Fold, cut and paste another square in the same manner, and fit one box within the other.

Material for Square Pyramid:

An 8-inch square of manila drawing, or tinted construction paper.

Presentation:

Fold paper into sixteen small squares. Cut along continuous lines, as indicated in Fig. 49, and fold on dotted lines. When all

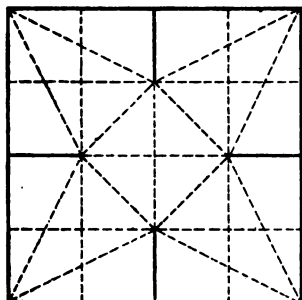


FIG 49

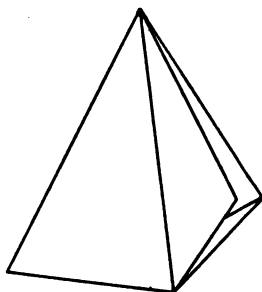


FIG 50

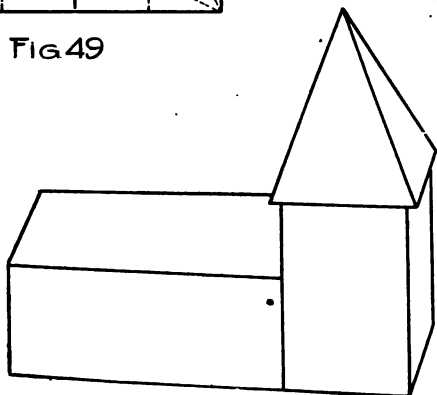


FIG 51

folding is completed, hold two opposite corners in an upright position, letting the other two fit around the outside as shown in Fig. 50.

By grouping the house, the pyramid, and square prism, we have the church. Fig. 51.

The Church—(Main Building)

Material:

One 9-inch square of manila, or tinted construction paper.

Presentation:

Pass paper to pupils, asking them to construct a house the same as in the log house.

Trees

To cut interesting trees to aid in making the sand table complete, take a piece of number paper or tinted construction paper, Fig. 52, and fold into thirds. Do this by folding 1 over 2, and then both over on 3. Fig. 53. Fold (Fig. 53) again, making it one-half as wide. (Fig. 54.)

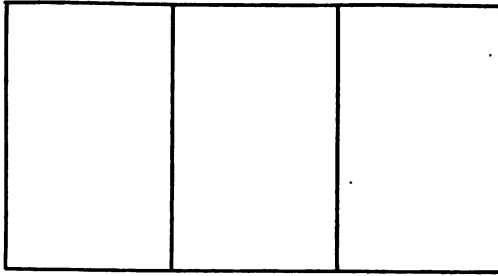


FIG. 52

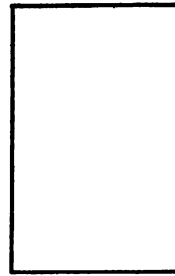


FIG. 53



FIG. 54

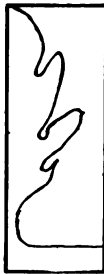


FIG. 55



FIG. 56

From the open side of Fig. 54, cut as shown in Fig. 55, and unfold. There are three trees. Crease the middle tree just the opposite to what it is now creased, and let the three trees come together so as to make one tree with a standard. Fig. 56.

By applying paste, the three parts and standard may be pasted together in such a way that it makes a very substantial tree and standard. Color with crayons or water color or use tinted construction paper if so desired.

Box for Vocabulary Cards

This box is constructed the same as former boxes.

Purpose:

- To provide a place for the vocabulary cards.
- To continue the incidental number work.

Material:

Two 9-inch squares of manila, or tinted construction paper.

Presentation:

In the construction of a box and a cover from the same size square, a little difficulty is experienced in removing the cover of the

box. For this reason, permit the pupils to cut a strip about $\frac{1}{8}$ inch wide, freehand, from two edges of the square which is to be used for the box. Cutting from two edges continues to keep the paper square.

How to Use Vocabulary Cards

The cards may be obtained from a supply house. There are forty cards in a set. Each card has on it a picture illustrating some noun found in the primer. Fig. 57.

Cut the sheet into separate cards, leaving at first the written word and the printed word attached. This is done so that the child may associate the correct word with the picture.

On a separate sheet (Fig. 57A), may be found in both script and print the words on the cards. Cut these words apart and match them with the ones attached to the pictures, the print with the print, and the script with the script. Later, cut away the words





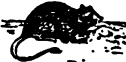







man 	robin 	goose 	farmer 
man	robin	goose	farmer
rat 	bird 	rooster 	frog 
rat	bird	rooster	frog
pig 	hen 	cat 	chick 
pig	hen	cat	chick

Fig. 57 Vocabulary Cards.

jack-o-lantern	umbrella	turkey	soldier	boat	swing	box	book	girl	bee
<i>jack-o-lantern</i>	<i>umbrella</i>	<i>turkey</i>	<i>soldier</i>	<i>boat</i>	<i>swing</i>	<i>box</i>	<i>book</i>	<i>girl</i>	<i>bee</i>
Santa Claus	squirrel	cradle	father	acorns	cow	hay	ball	bird	kite
<i>Santa Claus</i>	<i>squirrel</i>	<i>cradle</i>	<i>father</i>	<i>acorns</i>	<i>cow</i>	<i>hay</i>	<i>ball</i>	<i>bird</i>	<i>kite</i>
grandmother	mother	apples	bunny	drum	sheep	chick	boy	frog	tree
<i>grandmother</i>	<i>mother</i>	<i>apples</i>	<i>bunny</i>	<i>drum</i>	<i>sheep</i>	<i>chick</i>	<i>boy</i>	<i>frog</i>	<i>tree</i>
Mr. Postman	dandelion	flower	farmer	barn	fence	horse	hen	owl	nest
<i>Mr. Postman</i>	<i>dandelion</i>	<i>flower</i>	<i>farmer</i>	<i>barn</i>	<i>fence</i>	<i>horse</i>	<i>hen</i>	<i>owl</i>	<i>nest</i>

Fig. 57A Words for Vocabulary Cards.

attached to the pictures. Have the pupils lay the pictures on their desks and then find the word, both script and print, that belong to the picture.

The hektograph may be used in preparing this material.

Number Game

The construction of this game is based on the cube.

Material:

Two 9-inch squares of manila drawing paper or tinted construction paper.

One set of six figures, the sum of any two not to exceed 10.

Purpose:

To provide an interesting way of introducing number combinations through the game.

To continue simple construction.

To continue to lay the foundation for formal number through constructive number.

To begin to familiarize the pupils with the simple geometric forms, beginning with the cube.

Presentation:

There is rarely a child who does not enjoy making things. Tell the pupils about the game, and something of the way it is played. Show them a finished cube with figures pasted on each of the six surfaces.

Construct the cubes of the two 9-inch squares in the following way:

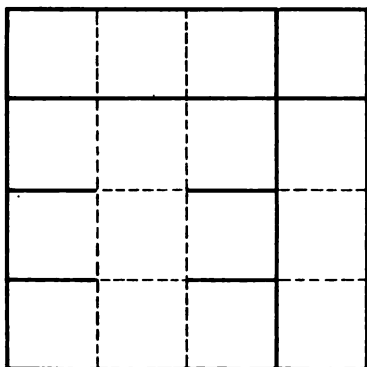


Fig 58

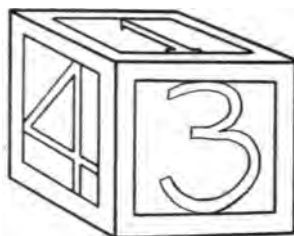


Fig.59

Fig. 58 shows the folding of one of the 9-inch squares. Cut along continuous lines. Fold on dotted lines and paste into box form. Repeat the same for the second square. Force one box within the other. This makes a very substantial cube, on the surfaces of which the figures may be pasted. Fig. 59.

The figures may be cut from large out-of-date calendars. They may be printed with the rubber figures which come in a box with rubber type, or a sheet of large figures may be hektographed and a sheet passed to each pupil.

There may be found in the market large figures printed for this purpose at a very small expense.

The Game

The class is divided into sides. Two pupils, one from each side, come before the class, and when the signal is given, they throw the cubes. The one who can give the sum of the two figures used on the cube scores a point for his side.

At first the sum of any two figures used on the cube should not exceed ten.

The score is kept on the blackboard by the teacher. The game is won by the side making the highest score.

Envelope for Vowel Families

Fig. 60 shows a group of vowel families. There are two sets.

Cut on all continuous lines. This leaves a number of long, narrow strips with dotted horizontal lines crossing them. These dotted lines indicate the number of words in each family.

Place all the strips in a row on the top of the desk. As each word is picked up, place it on the strip under the name of the family to which it belongs.

et	en	ag	an	at	bet	Ben	bag	can	bat
.....	let	den	rag	fan	cat
.....	met	hen	gag	man	fat
.....	net	men	nag	pan	hat
.....	pet	ten	tag	ran	mat
.....	wet	when	wag	tan	pat
.....	get	then	lag	Dan	rat
.....	jet	wren	rag	than	sat
.....	set	pen	sag	ran	that

Fig. 60 Vowel Families.

Do not allow the pupils to find all the words belonging to a certain family before beginning another. When this plan is pursued, too much time is spent in looking for certain words.

From the experience gained in previous envelope-making, have the pupils construct from material furnished, an envelope into which the various parts of the game may be placed.

Materials for November:

Sail-boat—1 pkg. 9x12-inch construction paper.

House—1 pkg. 9x12-inch construction paper.

1 pkg. 6x9-inch light weight number paper.

Cradle—1 pkg. 9x12-inch tinted construction paper.

Church—2 pkgs. tinted construction paper.

Trees—1 pkg. 6x9-inch tinted construction paper for small trees.

1 pkg. 9x12-inch tinted construction paper for large trees.

Box for Vocabulary Cards—1 pkg. 9x12-inch tinted construction paper.

Vocabulary Cards—50 sheets. Fig. 57.

Vocabulary Cards—50 sheets. Fig. 57A.

Number Game—Figs. 1 to 5, 50 sheets of each.

1 pkg. 9x12-inch tinted construction paper.

Envelope for Vowel Families—1 pkg 6x9-inch construction paper.

Vowel Families—50 sheets. Fig 60.

DECEMBER

During the last three months the work done along construction lines has been largely related to schoolroom administration and academic work.

Some time during the year every child should make something to go into the home. December is the most appropriate time to consider home problems. The problems chosen should be practical and of such a nature that the mother or father may make use of whatever they may be.

The following suggestions will aid the teacher in selecting suitable gifts for the children to make.

The spirit of helping and giving, rather than receiving, should be fostered. The value of the work, rather than the material, should be emphasized.

Cutting and Tearing

Appropriate to the month—fir trees, fireplace, stockings, sleds, chimney, etc. Make cuttings to show what they wish to make for different members of the family and their playmates.

Make an appropriate Christmas poster, following the suggestion given for the Thanksgiving poster.

Clay Modeling

Suggestions given for cutting and tearing may be used in three dimensions in the clay.

Discourage the sticking on of pieces.

Work in the round, drawing the several parts from the original piece of clay.

Christmas Tree Decorations

Purpose:

To make children happy in doing a service for others.

To acquire, incidentally, skill in handling materials, number and construction.

Popcorn Basket

Fig. 61 shows a popcorn basket, the folding of which is the same as that for the pyramid used in the November outline.

The inner creases of the folding form a square with a point on each edge resembling a four-pointed star. Between each pair of points there are two triangles. Fold these triangles one over the other until short edges reach the creases which outline the points. Paste and add handle.

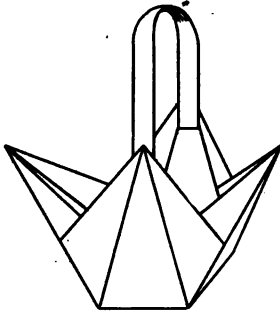


Fig 61

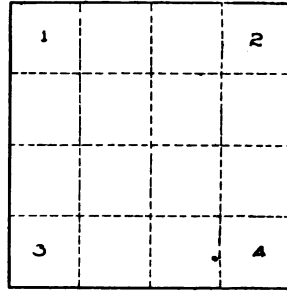


Fig 62

Three-Sided Basket With Point on Each Side

To make the basket shown in Fig. 63 fold a 4, 6, or 8-inch square of tinted construction paper into sixteen small squares, as shown in Fig. 62.

Fold points 1, 2, 3 and 4 to center and crease well. This forms four triangles. Cut away triangle 2, and along one side of the triangle formed by cutting away 2.

Slip this free-edged triangle under the one next to it, and paste. This forms the triangular basket with a point on each side, as shown in Fig. 63.

Three-Sided Basket With Two Points on Each Side

To make Fig. 64, fold square as shown in Fig. 62. Cut and paste as shown in Fig. 63. Cut away the square from each triangle that hangs over sides. This forms the two points as shown in Fig. 64 in place of one shown in Fig. 63.

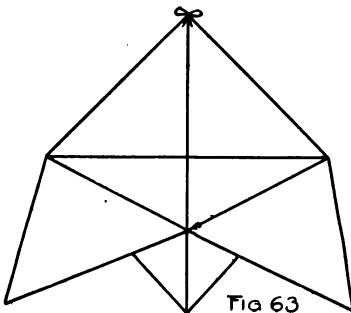


Fig 63

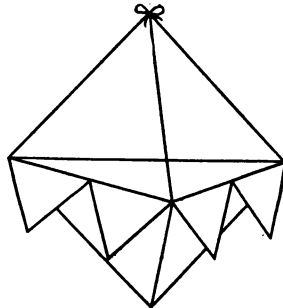


Fig 64

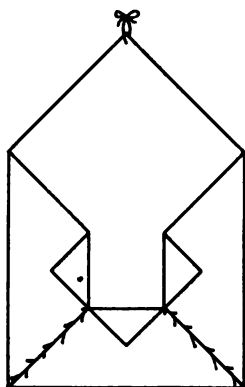


FIG 65

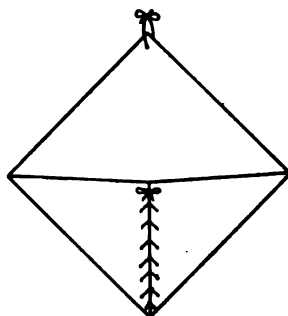


FIG 66

Lanterns

Lanterns of various colors and sizes, such as were made in October, make very interesting Christmas tree decorations.

Wall Pocket

This is a gift for the home. Fig. 65. Fold diagonals of a 9-inch square. Fold three corners of square to center. With a paper punch make holes as shown in Fig. 65. With candle wicking, narrow ribbon, raffia, carpet warp or jute, lace the basket as shown in Fig. 65.

Fold diagonals of 9 inches square.

Fold the corners of the square to the center. Unfold one corner and cut along crease. Unfold the next corner and cut along the crease. Punch the edges of the other two and lace, as shown in Fig. 66.

Picture Frame

Fold a 9-inch square as suggested for pocket shown in Fig. 66. After folding the corners to the center turn the form over, plain side up. Fold each corner to the center. Turn the form over. Fold each corner at the center back, so that they lie on the corners of the square, Fig. 67. Add a small Christmas picture or a calendar pad.

Cake Basket for Christmas Tree

Fold picture frame, Fig. 67.

Turn the form over. Here we have four corners which meet at the center. Fold each corner back to the middle of the edges opposite. Fig. 68. Turn the form over. Add a handle by inserting the ends into two opposite corner pockets and paste. Fig. 69.

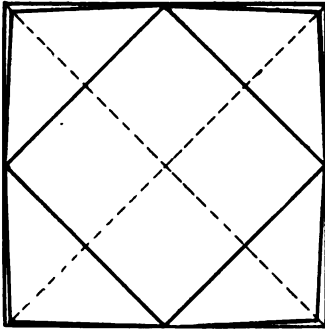


FIG 67

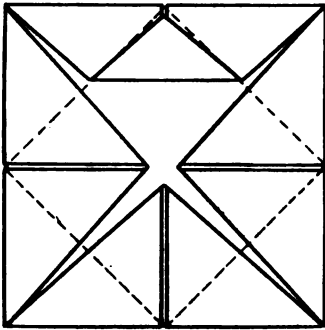


FIG 68

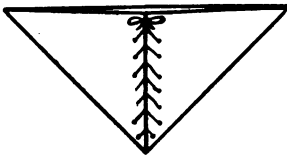


FIG 71

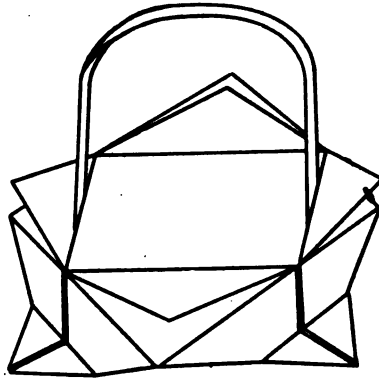


FIG 69

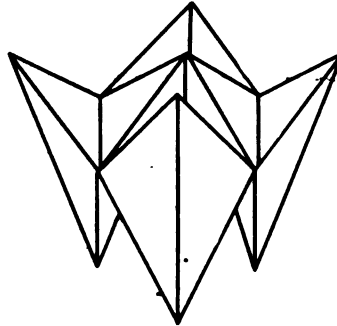


FIG. 70

Christmas Tree Ornament

Fold a 6-inch square into a picture frame without turning back the corners at the center.

There are now four corners at center. Slip the little finger deep into one pocket, the third finger into the next, the first finger into the next, and the thumb into the last.

In doing this it will be found that the corners have a tendency to bend downward. Fold them down by bringing the fingers together until the four corners come together at one point. Upon removing the fingers the corners will naturally spread a little, and the ornament will stand on four points. Add a handle with which the ornament may be hung. (Fig. 70).

Book Mark

Fold a rectangular piece of tinted construction paper 4x2 inches as follows:

Bring one short edge over until it meets or coincides with half of the front edge. Bring the other short edge over until it coincides

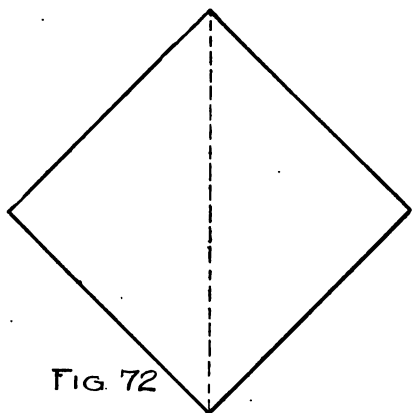


FIG. 72

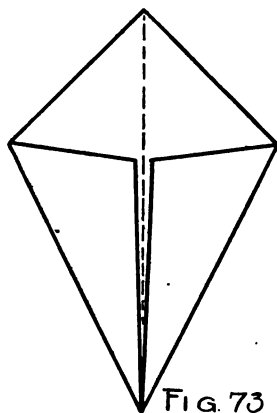


FIG. 73

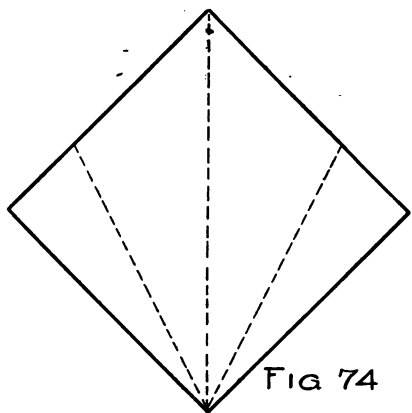


FIG. 74

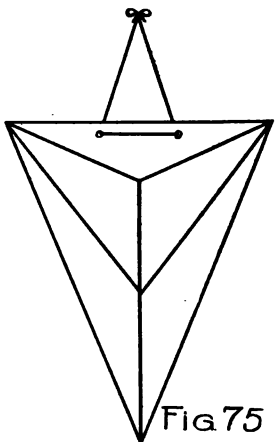


FIG. 75

with the other half of the front edge. Punch edges and lace as shown in Fig. 71.

Hair Receiver

Fold one diagonal of a 9-inch square of tinted construction paper. Place the squares so that the diagonal fold is vertical. This brings one point of the square directly to the front. Fig. 72. Fold two edges, one at each side of the diagonal, in to meet the diagonal. This gives a kite form (Fig. 73). Unfold and we have Fig. 74. Bring 1 and 2 to the back, allowing one to overlap the other. Turn the point at the top downward to the outside. (Fig. 75.)

A woven square of contrasting colors or tints of the same color folds into a very interesting hair receiver. In this case the point at the top is folded to the inside of receiver.

Candy Box

Of two 9-inch squares of green paper, fold box and cover as directed in previous months. To close the box use red strips of paper $\frac{1}{4}$ inch wide.

Closed Candy Box

Hold paper by two opposite corners. Fold right and left corners together; upper and lower. Unfold.

Fold each of the four corners to the center. Unfold.

Fold upper corner to middle of first crease. Unfold.

Fold upper corner to middle of lowest crease. Unfold.

Fold right, left, and lower corners in the same manner.

Find upper corner. Find second triangle from upper corner on right side (a). Cut it away. Find third triangle (b). Cut it away. Cut away corresponding triangles (c, d) on the left side.

Beginning at the lower corner, repeat above. Fig. 76.

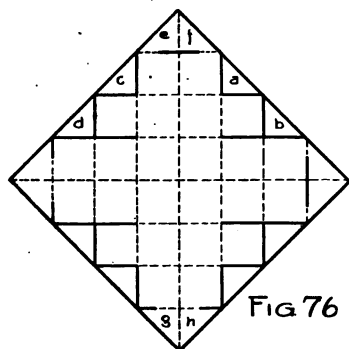


FIG 76

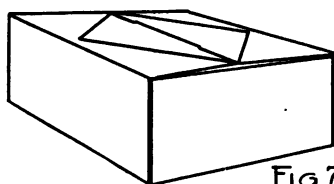


FIG 77

Find two triangles at upper corner (e, f). Find lower edge of right-hand triangle (f). With scissors make hole in middle of this edge; in middle of lower edge of left-hand triangle (e).

Cut from one hole to the other.

Find two triangles at the lower corner.

Find the upper edge of the right triangle (h).

Make a hole in the middle of the upper edge.

Cut from the right end of the upper edge to the hole. Fold the corner thus made to the left end of the upper edge of the right triangle.

Cut and fold left triangle (g) to correspond.

Make the right corner of the entire square correspond with the upper corner. Make the left correspond with the lower corner.

Pass the lower corner through the slit in the upper corner and unfold.

Pass the left corner through the slit in the right corner and unfold. Fig. 77.

Shaving Pad

This makes a very practical gift for the father. It consists of 25 4-inch squares of tissue paper punched in two upper corners. A 4-inch square of tinted construction paper is placed at the top and bottom. All are tied at the corners with a piece of macrame twine, which serves as a hanger and keeps the sheets together.

Christmas decorations may be added to the inside cover.

Calendars

A great variety of interesting calendars may be made by bringing different sizes of rectangular pieces of tinted construction paper together, in such a way that the edges of one color extend just beyond the edge of the one above. These may be tints of the same color, or they may be of harmonious contrasting colors. This makes a mount on which may be placed an appropriate picture or a cutting, as shown in Figs. 78 and 79.

Figure 78 is made of holly green and red construction paper. Any other colors may be chosen. The larger rectangle is of red. The smaller of green. The freehand cutting of the pine tree is of green.

This cutting is placed on a piece of red. The red is then cut, following the outline of the green, only that the red is cut so that it extends about $\frac{1}{8}$ inch beyond the green. In placing the calendar, cut a rectangular piece of red large enough to extend about $\frac{1}{8}$ inch beyond the calendar. For the first grade pupils the parts should be cut by the teacher, the pupils to assemble the parts.

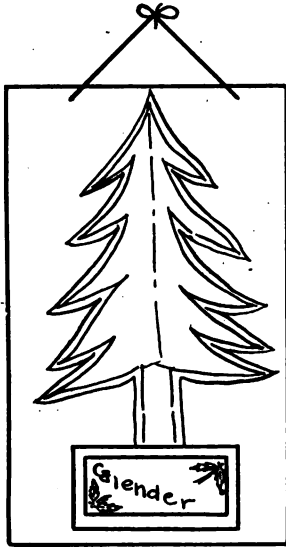


FIG. 78

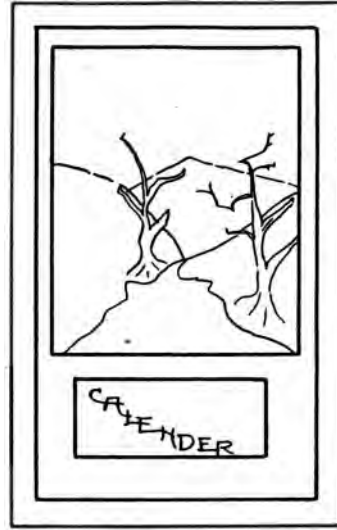


FIG. 79

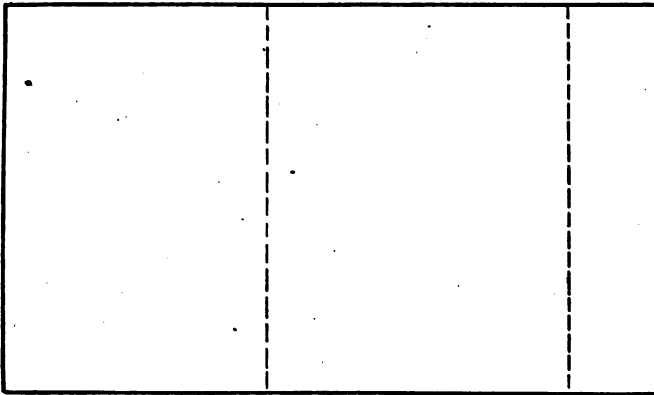


FIG. 80

Envelope for Calendar

Make a simple folding for the envelope. It will not be necessary to close the sides. Fig. 80 shows a simple folding. A Christmas sticker or two adds greatly to its decoration.

Darning Cotton Case

This makes an interesting gift for the mother. It consists of three thread winders, a needle, one spool of darning cotton, and a box to hold them. To construct the thread winders, proceed as follows:

First, fold pattern for thread winder. Pass to each child a 3-inch square of paper. Fold into sixteen small squares. Place the folded square on the desk, as shown in Fig. 81. Fold the corner (a) so it meets the corner (b). In this way fold each outside corner of the square so it meets the corner of the square opposite. When this is done, we have Fig. 82. Cut away the triangles as indicated by the continuous lines.

This pattern may now be placed on squares of bogus bristol board and traced. Make three.

In purchasing cotton for the room, get black, white and brown.

Each pupil averages one spool, using one-third of a spool on each winder.

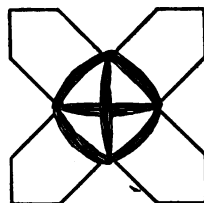
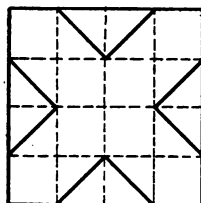
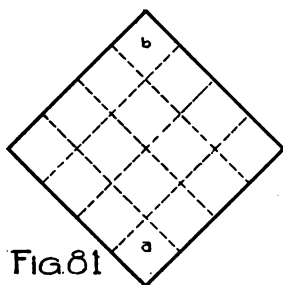
Such an arrangement makes it possible for each child to have one-third of a spool of each color.

To Wind the Cotton:

Let each child have a spool of cotton regardless of color. Wind the cotton six times around each point of the winder and six times each way across the center. See Fig. 83. Repeat this five times and one-third of a spool of cotton is used. Have the pupils exchange colors and with a second thread winder proceed to wind as in the first. In this way each child gets a spool of cotton, but in three colors.

To Make the Box:

Pass to each child two $7\frac{1}{2}$ -inch squares of construction paper. Instead of folding in the construction of this box, have the pupils use the ruler as a straight edge. Place the ruler along one outside edge and draw a line as far from the edge as the ruler is wide. Move the ruler so one edge of it coincides with the line just drawn.



(The ruler should not be more than one inch wide.)

Repeat this for the remaining three sides. (Fig. 84.) The sides of the box are to be double. Crease on the inside lines and cut as indicated by continuous line. Proceed to finish the box as suggested in former lessons.

Before ruling for the box, cut away a strip of about $\frac{1}{8}$ inch from two of the sides. This difference will make it possible to easily remove the cover.

Add a fine darning needle and the gift is completed.

Another Interesting Basket

Fold and cut a 5, 6, 7, 8 or 9-inch square the same as when making the pattern for thread winder. Fold and tie the points upward. Turn the triangles at the top outward. (Fig. 85.)

Story Book

Purpose:

- To review the vocabulary of the primer.
- To interest the pupils in the construction of a story book.
- To review simple book construction.
- To give the pupils exercise in arrangement.

Material:

Five sheets of manila drawing, unruled language or tinted construction paper, 9x12 inches.

One sheet of a dark color construction paper for cover.

One sheet of eighteen short stories. Fig. 85A.

One sheet of eighteen pictures. Fig. 85B.

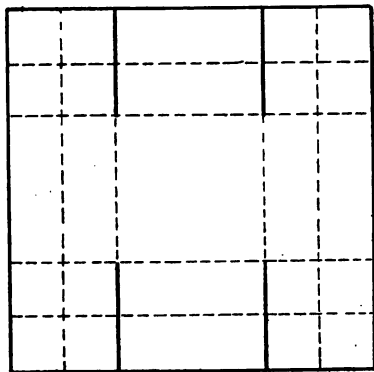


Fig. 84

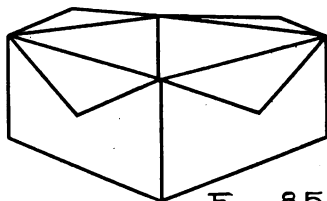


Fig. 85

Carpet warp, macrame cord, jute or candle wicking with which to tie the sheets together.

Presentation:

This problem makes a most interesting exercise. The teacher will first construct the book and then arrange and paste the pictures and short stories. This will go toward enthusing the children to make

I am a big girl.
I have a kitty.
Kitty and I play.
My kitty can run.
Can you run?

This is our baby.
May is a big girl.
Baby is not a big girl.
Can baby play?
Baby can play with kitty.
Baby can play with Spot.

This is my pony.
He is not big.
He can run and jump.
Can you run and jump?
Baby likes my pony.
My name is Ned.

Good morning chick.
I will feed you.
Do you like corn?
I will get some for you.
Corn is good for chicks.
May will feed you.

I am a big dog
My name is Spot.
Spot can play.
The baby likes Spot.
Spot likes the kitty.
Kitty plays with Spot.

I am a big ball.
Spot can play with me.
Kitty can play with me.
The kitty likes the ball.
The dog likes the ball.
May can play with me.

This is a pretty nest.
A bird made it.
The nest is in a tall tree.
It is not an apple tree.
This is not an owl's nest.
The nest is made of hay.

Have you a swing?
Do you like to swing?
I can swing.
Where is your doll?
I like to swing the doll.
The doll likes to swing.

This is a pretty bird.
Her nest is in a tree.
The bird can fly high.
This is a small bird.
The turkey is a big bird.
Some birds eat corn.

The turkey is a big bird.
He can fly up into a tree.
May feeds the turkey corn.
He likes to eat corn.
He sleeps in a tree.

This is a pretty flower.
Flowers grow in the garden.
Bob has a pretty flower bed.
Some flowers grow from seeds.
Do you like the flowers?
Do you have a flower bed?

The tree is green and pretty.
It is not a Christmas tree.
It is an apple tree.
The apple tree is not tall.
Tom likes a tall tree.
Tall trees grow in the woods.

Little Boy Blue saw the sheep.
He did not take care of the sheep.
He went to sleep under a hay stack.
He did not take care of the cows.
The cows got into the meadow.

This is a happy little bee.
It likes the honey in the flowers.
Honey is good for boys and girls.
Bees make sweet honey.
Bees live in a hive.
The hive is their home.

I am a farmer.
I plant corn for the chick.
The farmer plants corn for you.
Pumpkins grow on the farm.
Tom lives on the farm.

This is Tom's grandfather.
He is a farmer.
He gave Tom a pretty book.
Grandfather has a big dog.
His name is Spot.
The dog does not like the cat.

This is the little red hen.
She sat on her eggs.
Her nest was in the hay.
How do you like her chicks.
May feeds the chicks.
Tom likes the little chickens.

Winter has come.
How do you like the snow?
How white it is.
The boys make snow balls.
Tom and Ned make big ones.

Fig. 85A Printed Sentences.

their books as well as the one made by the teacher. It will take some time to complete the book, as there are a number of pictures, Fig. 85B, and a story for each, Fig. 85A. Place one picture and a story on a page. Fig. 85C.

Cut the several sentences into separate sentences, or if drill is needed in the arrangement of words, cut each sentence into words, permitting the children to again group the words into sentences.

Do not hurry the work.

If necessary, let this problem carry over for the month of January.

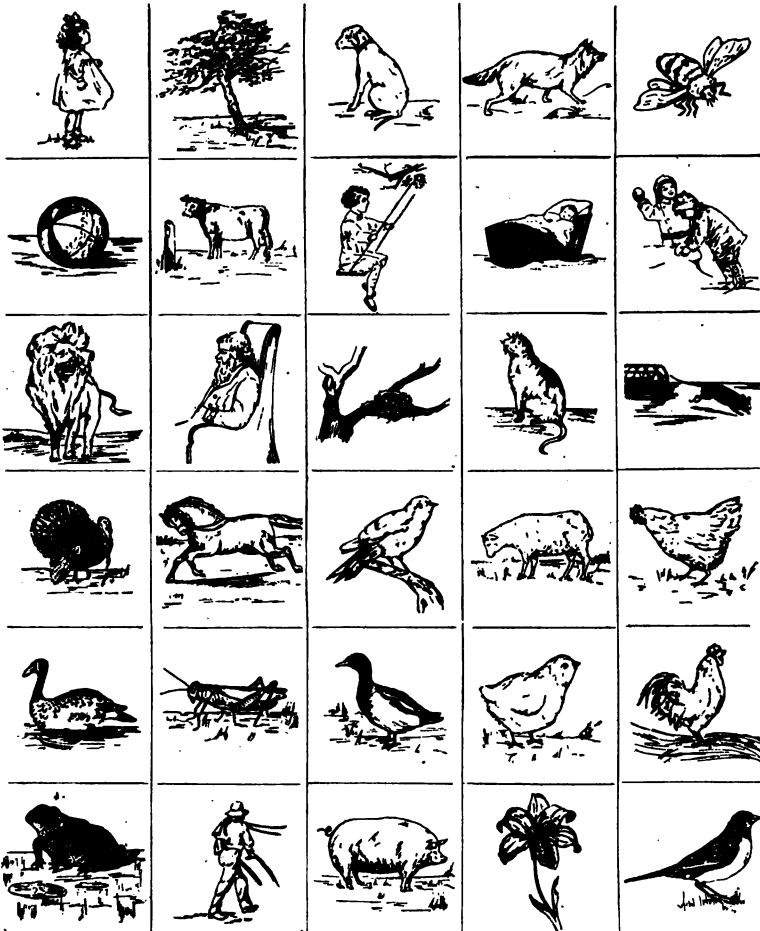


Fig. 85B Pictures for Printed Sentences.

To Make the Book:

Fold each 9x12-inch piece of paper into halves by bringing the short edges together.

Place one within the other, putting the construction paper for cover on the outside.

With a coarse darning needle force two holes in the crease down the center, one two inches from the top of the book and the other two inches from the bottom of the book. With the needle threaded with a piece of twine, bring it through the hole at the bottom from the outside, leaving an end of about six inches. Bring the needle through the hole near the top to the outside. With the two ends at the outside, tie a hard knot and then a bow knot. Fig. 85C shows the finished work.

It will be observed that more pictures are shown in plate 85B than there are stories. All pictures not provided with a story are placed one at the top of each page of the book. Stories may be hextographed in script and arranged beneath the pictures. Such a plan gives the pupil the chance to arrange script as well as print.



Fig. 85C Finished Story Book.

Pictures and Sentences:

Another interesting way of using the pictures and sentences is to have pupils construct envelopes of a good size and to the top paste a picture and the sentences beneath, as shown in Fig. 85D. The same sentences are written, cut into strips and placed inside the envelope. During a period for seat work the pupils are asked to place the sentence in script opposite the printed sentence. For variety the teacher might hektograph the sentence in script on the face of the envelope and the printed sentences may be placed inside the envelope. The print is then placed opposite the script.

Materials for December:

Popcorn Basket, Three-Sided Basket, Lanterns—1 pkg. 9x12-inch tinted construction paper.

Wall Pocket—1 pkg. 9x12-inch construction paper.

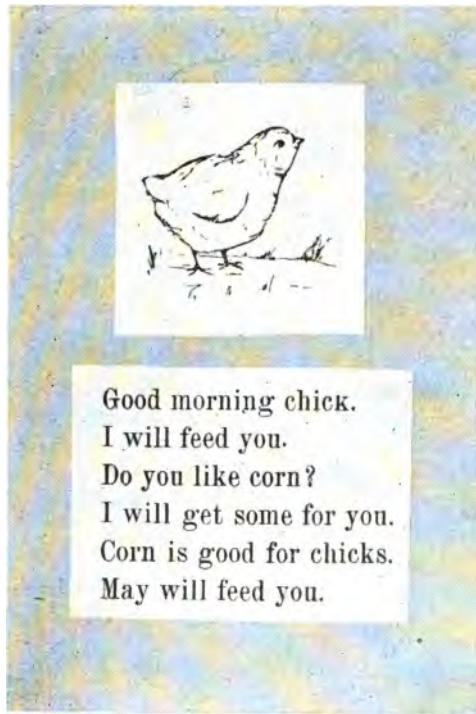


Fig. 85D Finished Story Envelope.

Letter Case—Narrow ribbon, caudle wicking.

Raffia or carpet warp for lacing.

Cake Basket, Christmas Tree, and Ornament—1 pkg. 9x12-inch construction paper.

Book Mark—May be made of scraps.

Hair Receiver—1 pkg. 9x12-inch construction paper.

Candy Box, and Closed Candy Box—1 pkg. 9x12-inch construction paper.

Shaving Pad—1 pkg. 6x9-inch construction paper.

Calendars—Scraps of tinted construction paper.

1 pkg. calendar pads.

Envelope for Calendar—1 pkg. 6x9-inch construction paper.

Darning Cotton Case—2 sheets bogus bristol board.

50 spools darning cotton.

1 pkg. 9x12-inch tinted construction paper for box.

Candy Basket—1 pkg. 9x12-inch construction paper.

Story Book—3 pkgs. white construction paper.

1 pkg. printed sentences. Fig. 85A.

1 pkg. pictures for printed sentences. Fig. 85B.

JANUARY

Learning to Measure

The pupils have already had numerous lessons in constructing boxes, envelopes, baskets, etc., without the use of the ruler as a measure. In a few cases, the ruler has been used as a straight edge in ruling certain lines, but no exercise calling for definite measurements in inches has been mentioned, up to this time.

In the comparison of objects made and handled, the pupils should now be familiar with such words of comparison as taller, shorter, higher, lower, tallest, shortest, highest, lowest, larger, smaller, longer, largest, smallest, longest, nearer, nearest, wider and widest.

The Foot Rule

The first-grade child should not be allowed to handle a ruler marked off into divisions smaller than the inch. Rulers marked off in inches are kept in stock by school supply dealers. The fact that beginning ruler-work is dreaded by most teachers is due to the fact that poor rulers and rulers marked off into the smallest divisions are put into the hands of the beginners thus making the work very confusing.

Pass to each child a foot-rule. Hold up your rulers to see if they are all the same length. Have several pupils lay their rulers together until they are satisfied that all are of the same length.

Cut a strip of paper one foot long.

Each ruler is one foot long.

With your ruler draw on the blackboard a line one foot long. Erase. Now draw on the board a line one foot long, without the ruler. Measure with the ruler to see if the line is just one foot long.

Look about the room to see if you can find anything about one foot long.

At the close of a lesson like the above, the pupils should be familiar with the following written words: One foot; 1 foot; foot-rule.

Stand against the blackboard. Make a mark on the board even with the top of your head.

With a piece of string measure from the floor to this mark. Pin the string on the floor. Place on it foot-rulers, end to end. How many rulers do you need to cover the string from pin to pin?

The string is how many foot-rulers long? Now measure it with only one ruler. Place the ruler on the string, and make a mark at the end of it. From this mark, measure the length of the ruler and

make another mark at the end of it. Mark off all the string in this way. How many feet long is it? About how tall are you?

Without using the ruler, place on the board a line two feet long. Measure with your ruler to see if the line is two feet long. With the use of the ruler make the line just two feet long. Without using the ruler, draw a line three feet long. Measure to see if the line is three feet long. With the use of the ruler make the line just three feet long.

One foot and one foot are—feet.

Using your ruler, erase two feet of the line. Measure the part which is left. How long is it?

Three feet less two feet is—foot.

Two feet and one foot are—feet.

With your ruler, draw a two-foot line. Draw another two-foot line. How many feet are there in both lines?

Two two-foot lines are—feet long.

Using the ruler, draw a line three feet long. Draw another line one foot long. How many feet are there in both lines?

Three feet and one foot are—feet.

Four feet less three feet is—feet.

Have the pupils measure objects in the room.

How many feet long do you think the teacher's desk is? Measure to see if you are right. How wide do you think it is? Measure to see if you are right. How wide do you think your desk is? Measure to see how nearly right you are. How high do you think it is? Measure to see if you are right.

Which do you think is the wider, the door or the window? Measure to see which is the wider. How many feet do you think it is from the floor to the blackboard? Measure.

How long do you think the teacher's pointer is? Measure.

With a piece of chalk in each hand, stretch your arms as far apart as you can, and make two marks on the board. Measure the distance between the marks on the board to see how far apart you can stretch your hands.

The Inch

To teach the inch, borrow the colored sticks provided for the second-grade problems.

Place on each child's desk a blue stick *one inch long*. Tell them that each stick is just *one inch long*. Show an inch on your foot-rule. Cut a strip of paper one inch long.

For the cutting of paper strips of various lengths, use the strips of bogus bristol board, such as is used for double weaving in the second grade. By having a uniform width, the pupils have only the length to consider in the paper strip cutting.

Place on the desk of each child a red stick two inches long, a

green stick three inches long, a yellow stick four inches long, an orange stick five inches long, and a purple stick six inches long.

With the one-inch strip of paper, find how long the red stick is, the green stick, the yellow stick, the orange stick, the purple.

Cut a strip of paper two inches long. Cut another three inches, another four inches, another five inches.

Put the four-inch strip and the two-inch strip end to end. Count the inches in both strips. How many inches? Now make six inches by putting end to end the one-inch strip and the —inch strip.

Cut a strip of paper six inches long. Measure it with the two-inch strip. How many two inches make six inches?

Measure the six-inch strip with the three-inch strip. How many three inches make six inches?

Cut strips of paper from one to six inches in length, and paste in order from one to six inches.

Measure the foot-rule with the six-inch strip. How many six inches make one foot?

Measure the ruler with the two-inch strip of paper. How many two inches make one foot?

Measure in like manner with the four-inch and the three-inch strips.

Count the inches on the ruler.

On a 6x9-inch piece of drawing paper have the pupils draw lines from one to six inches in length, drawing them in the same order as the strips of paper were pasted.

Such an exercise should be followed by a series of questions similar to the following:

How many two-inch lines may be made from the four-inch line?

How many may be made from the six-inch line?

How many of the three-inch lines may be made from the six-inch line?

The four-inch line is how much longer than the three-inch line?

The three-inch line is how much longer than the two-inch line?

To determine the above, it will often be necessary to refer to the strips of paper or the colored sticks.

Making Decorative Chains

There is nothing especially new in the construction of decorative chains. In the past, the chains have been made of strips cut by the teachers, the pupils doing the pasting only.

Since the introduction of the ruler, the strips for the chain should be measured by the pupils.

Pass to each child two pieces of tinted construction paper, of different tints, each $4\frac{1}{2}$ inches wide and 9 inches long.

Place the ruler along the long edges of the paper and place

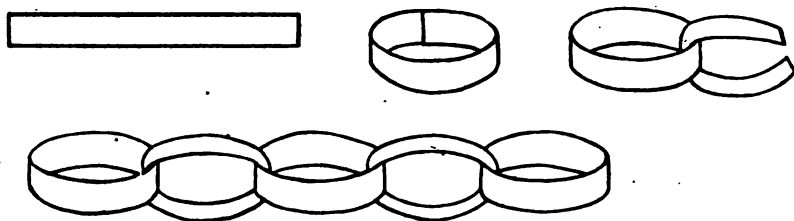


FIG 86

dots one inch apart. Connect the corresponding dots by straight lines. Cut along the lines just drawn, thus making one-inch strips. If narrower strips are desired, fold each one-inch strip lengthwise. Cut along crease, making half-inch strips. Paste as shown in Fig. 86.

The Doll House

The work for the next two months will be largely based on the furnishing of the doll house. Many of the exercises will be a combination of measuring and folding.

Purpose:

To give the pupils practical use of the foot-rule.

To give the pupils opportunity of acquiring number facts through the sense of touch, not depending entirely on sight and memory.

For example: Five inches means much more to the child after he has drawn a line or cut a strip of paper, or performed some other action involving the use of five inches, than if he simply hears or sees the words, five inches. He has gained five through another of the senses—that of touch.

To give delightful occupation to the child. Is there anything that the child revels in, more than when making something? And can there possibly be a better time to teach practical numbers, oral and written language, than during these periods of construction?

Do not wait until the room can be furnished with a beautifully constructed doll house, but go to the neighboring grocery and ask for two orange or lemon crates. Place one upon the other so the open sides face the room and you have a good foundation for a doll house of four rooms.

If at all convenient have each pupil construct his own doll house by pasting one 12x18-inch and two 9x12-inch sheets of drawing paper together. This is done in such a way that the 12x18-inch piece of drawing paper forms the back of the room and the 9x12-inch pieces the sides.

When not in use the three pieces may be folded flat. When the

pupils wish to use the room, the sides may be unfolded from the back and the three walls are in erect position.

Such an arrangement may cause a certain amount of confusion to the casual observer, but the educative value and the joy it brings to the child far surpass any seeming confusion. Each child feels more responsible when he has his own one-room house than if he works with the whole class.

Making a Table

Pass to each child a 9x12-inch piece of tinted construction paper. Place the ruler along the 12-inch edges and mark off 9 inches. Connect the corresponding dots by a straight line. Cut along this line, and a 9-inch square remains. Fold this 9-inch square into sixteen small squares, as shown in Fig. 87.

- Review the number.

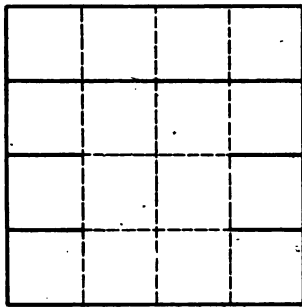


FIG 87

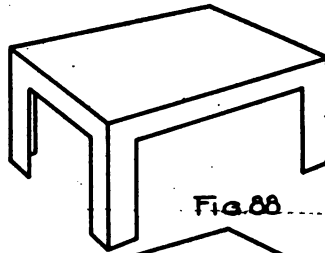


FIG 88

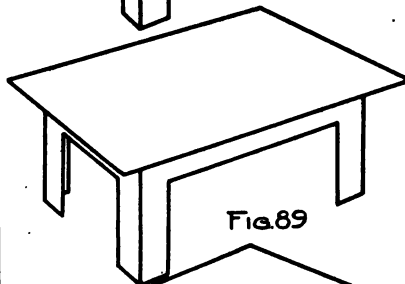


FIG 89

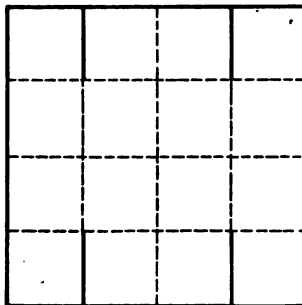


FIG 90

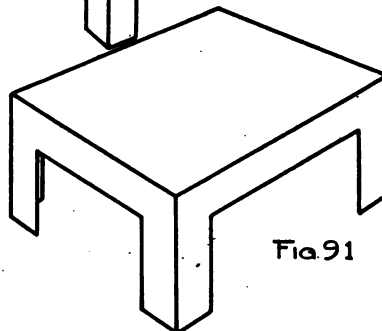


FIG 91

Cut all continuous lines as shown in Fig. 87. Fold and paste into box shape.

It is well to do the pasting one day and the cutting of the legs the day following. If the cutting is done before the paste is dry, considerable difficulty is experienced in having the different parts come apart.

In cutting, it is a little difficult to have the pupils measure the length of the legs. Have the pupils cut freehand about two-thirds of the distance from the edge to the bottom of the box. Do this on each side, leaving only the width of the legs. Fold the edge upward and crease. This crease will guide the pupils in cutting away the paper necessary, leaving only the narrow strip just below the edges of the table. Fig. 88.

If the extended top is desired, have the pupils cut a rectangle 4 inches wide and 6 inches long, and paste to top of table as shown in Fig. 89.

Another interesting way to make a table is to fold a 9-inch square into sixteen small squares. Fold and cut as shown in Fig. 90, and paste into box form. Cut legs as in Fig. 88.

This gives the finished table as shown in Fig. 91. It is larger than the others, but just as high.

After completing the table, have the pupils cut from any soft white paper the table cloth and napkins. Keep the measurements in whole inches.

Making a Chair

Pass to each pupil a 9x12-inch piece of tinted construction paper.

Place the ruler along the long edges and mark off 3 inches. Connect the dots by straight lines. Cut along the line.

Fold the 9-inch square into sixteen small squares. Review number work in the construction of the chair as suggested in box for shoe pegs, September outline. Cut as shown in Fig. 92.

Fold and paste into box form, allowing the square marked "back" in Fig. 92 to extend upward. After the paste has dried, cut legs in a similar way as for the table, Fig. 93.

To strengthen the back, paste one of the squares cut away across the back.

Making a Bed

Measure, cut and fold square as when making the table. Before applying paste, let the squares marked "head" and "foot" (Fig. 94) extend upward. Paste a strip of paper across head and foot of bed, as shown in Fig. 95.

Cut legs of bed the same as those of table. To make the bed lower, cut a small piece from each leg.

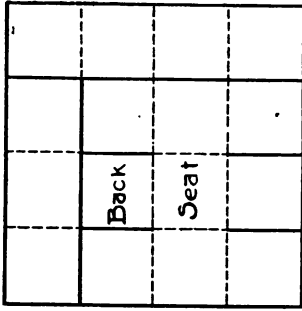


Fig. 92

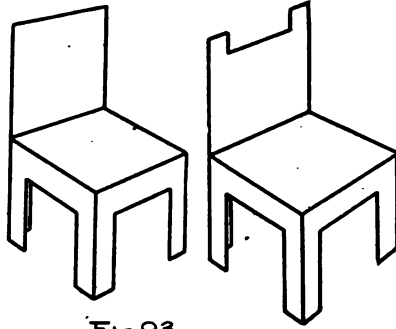


Fig. 93

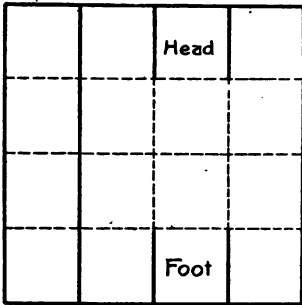


Fig. 94

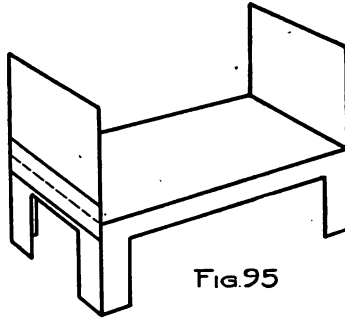


Fig. 95

A larger bed may be made if the 9-inch square is folded and cut as shown in Fig. 90.

Making a Davenport

Measure and cut 9-inch square as in former exercises. Fig. 87 shows folding. Cut and paste in box form. Place strip and cut away to form back and sides of davenport. Fig. 96. This makes the simplest kind of davenport.

Fig. 97 shows the folding of a davenport which may be made in one piece. It will be remembered that all dotted lines are to be folded and all continuous lines cut. Fig. 98 shows the finished davenport.

During the month of November suggestions were given for the construction of a cradle. This may again be constructed on a smaller scale, to be used in the furnishing of the house. It must be remembered that all this doll house furniture must be in good proportion. The chair cannot be as large as the table, nor the cradle as large as the bed. When using each by itself, the size is not taken into consideration, but when the various pieces are used together, the size plays a very important part.

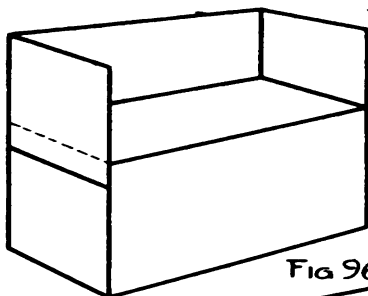


FIG 96

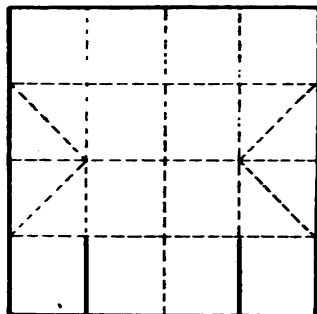


FIG 97

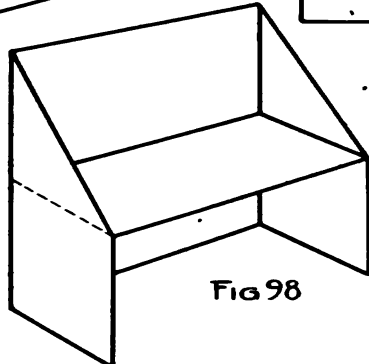


FIG 98

Weaving a Mat

The first covering for the floors may be woven of strips of tinted construction paper one inch wide. Care should be exercised in having the pupils use good combinations of color.

The dimensions of the mat will be determined by the size of the kitchen floor, although it is not necessary that the entire floor be covered by the mat. If a 9x12-inch piece of tinted construction paper is large enough, proceed to make the mat as follows:

One inch from each corner on the edges of the paper, place dots. Lay the ruler across corresponding dots and draw lines one inch from one edge to one inch from the opposite edge. Fig. 99.

Place dots one inch apart on upper and lower lines, and connect corresponding dots by straight lines. Fig. 100.

Fold edges together as shown in Fig. 101, and cut to line above. Unfold, and the foundation part of mat is finished.

Pass to each pupil another sheet of 9x12-inch tinted construction paper of a different tint. Place the ruler along the long edges and place dots one inch apart. Connect corresponding dots by straight lines. Cut into one-inch strips by following lines drawn. Weave these strips into foundation mat as shown in Fig. 102.

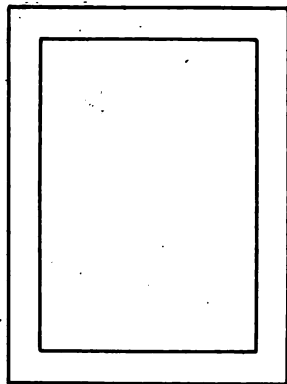


Fig 99

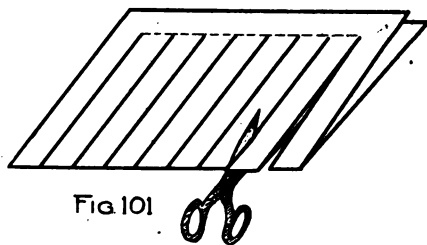


Fig 101

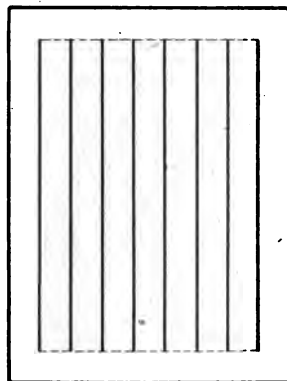


Fig 100

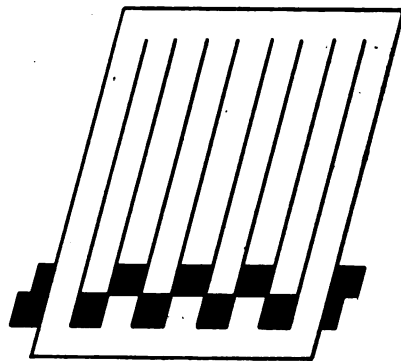


Fig 102

With brush and color, or with a colored crayon, make a design in the light squares of the mat. Use only straight lines. The design should be the same color as the dark squares.

If the mat, when finished, is given a coat of shellac or varnish, it makes a better floor covering and is made to look like linoleum. (Fig. 103.)

Envelope for Alphabet Matching Game

Fig. 104 shows an alphabet matching card. In preparing the game, first cut on the vertical lines separating the two sets of alphabets. This gives two long, narrow strips, on which is found the entire alphabet in both capitals and small letters. Fig. 104A. The second set of alphabets has the words attached to it. Cut on the horizontal lines only. Fig. 104B.

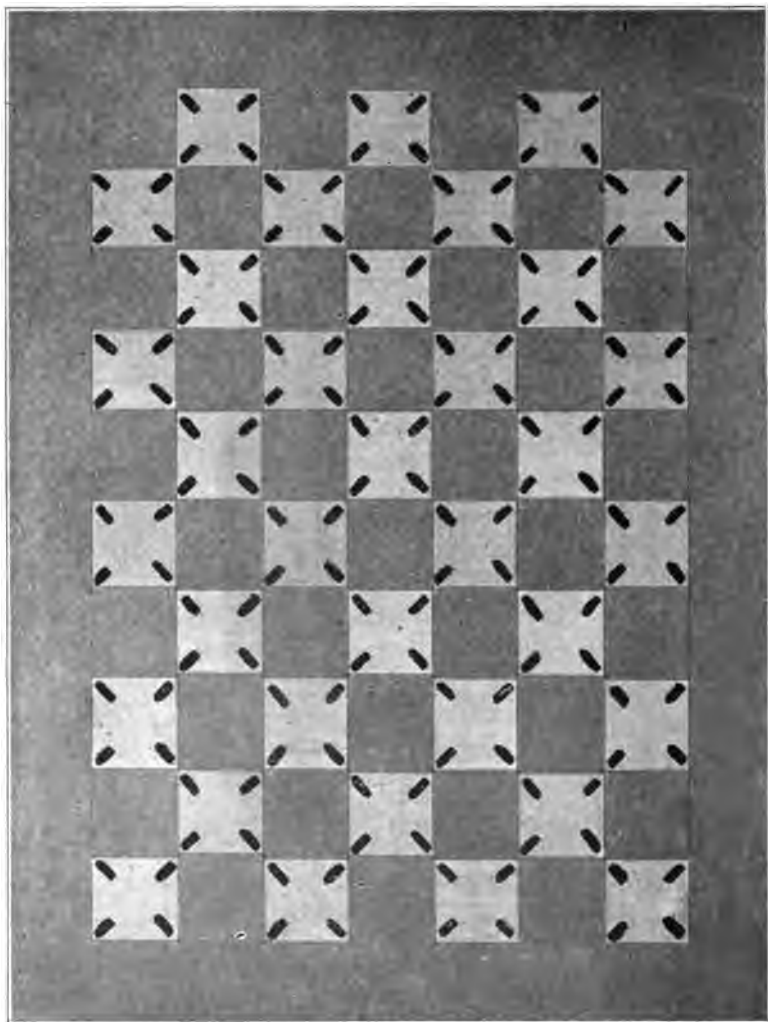


Fig. 103. Design Placed on Mat.

This gives as many strips as there are letters in the alphabet, each strip having on it a capital letter, a small letter, and three words beginning with a particular letter. Fig. 104B.

The game is first played by matching each letter of the alphabet with the three words attached with each letter of the alphabet on the long, narrow strips. Fig. 104C. When the pupils can do this

A a	A a	am	and	are	N n	N n	no	not	nest
B b	B b	baby	ball	big	O o	O o	out	one	of
C c	C c	can	clap	cow	P p	P p	play	pet	paw
D d	D d	do	dog	duck	Q q	Q q	quack	quick	quail
E e	E e	ever	every	eat	R r	R r	run	rabbit	ran
F f	F f	fat	feed	funny	S s	S s	see	skip	so
G g	G g	good	girls	go	T t	T t	to	trick	tail
H h	H h	hop	hand	her	U u	U u	up	under	up
I i	I i	is	it	in	V v	V v	very	very	very
J j	J j	jolly	just	jump	W w	W w	why	way	we
K k	K k	kick	kid	kitten	X x	X x	Xx	Xx	Xx
L l	L l	little	love	lap	Y y	Y y	yes	you	your
M m	M m	morning	my	may	Z z	Z z	Zz	Zz	Zz

Fig. 104 Alphabet Matching Card.

with a fair degree of rapidity, the words may be separated by cutting on the vertical lines. The pupils now match in the same way as before, by placing each word, instead of a strip containing all the words, in the proper place.

It has already been suggested several times, that pupils be taught, in all lines of seat work, to place each letter, word, or counting material as it is picked up, and not to spend several minutes, or even sometimes a whole period, looking for a certain letter or word.

N n	A a	G g	good	girls	go	A a
O o	B b					B b
P p	C c	A a	am	and	are	C c
Q q	D d	H h	hop	hand	her	D d
R r	E e					E e
S s	F f	D d	do	dog	duck	F f
T t	G g					G g
U u	H h	E e	ever	every	eat	H h
V v	I i					I i
W w	J j	B b	baby	ball	big	J j
X x	K k	C c	can	clap	cow	K k
Y y	L l					L l
Z z	M m	F f	fat	feed	funny	M m

Fig. 104A.

Fig. 104B.

Fig. 104C.

From material in the classroom, construct an envelope that will hold all parts of the game.

Material for January:

Decorative Chains—Two pkgs. of different colored tinted construction paper.

Table—1 pkg. 9x12-inch tinted construction paper.

Chair—1 pkg. 9x12-inch tinted construction paper.

Bed and Davenport—1 pkg. 9x12-inch tinted construction paper.

Envelope for Alphabet Matching Game—

Alphabet Game—50 sheets alphabet cards. Fig. 104.

FEBRUARY

February is the month for the mid-year promotions. All schools, however, do not have two promotions a year. September pupils of the first grade may continue with the advanced first-grade work as outlined. Pupils entering school in February should begin with the work outlined for September. This will include the various kinds of cutting, and the construction of the cutting envelope, envelope for dissected pictures, box for shoe pegs, ruling of peg board and envelope for peg board.

Much of the work relates to the seasons of the year. This might be termed "special." The special work for this month may be based on the February interests, the birthdays of Lincoln and Washington, and St. Valentine's Day.

Cutting

The freehand cutting for this month should very closely relate to the history for the month. Cut horses, which may be made a part of the great procession of covered wagons (prairie schooners) used in traveling from the east to the west during Lincoln's early life. The horses may be made to stand in pairs by folding a strip of paper $\frac{1}{2}$ inch wide and 5 inches long into five equal parts. Allow the fifth part to overlap the first, and paste. (Fig. 105A.) This makes a square. The horses, Fig. 105B, may be pasted to opposite sides of the square, thus making them stand.

The beginners may use the animal, bird and vegetable sheets as suggested in the September outline. This relates to the Nature work for the spring months.

Trees

Fold and cut trees as suggested in the November outline. These may be used in building up scenes from the lives of Washington and Lincoln.

Clay

Model horses. They may be hitched to moving wagons. Model men, women and children, to be placed in wagons. An interesting group problem grows out of this work for the month, thus giving each child in the room an opportunity to take part in making real the great procession of prairie schooners which brought so many people from the east to the west during Lincoln's early life.

Review of Log House

The log house suggested in the November work may very profitably be reviewed for this month. Use the ruler in measuring the 9-inch square in advanced first grades. To the beginners, pass the 9-inch square of paper and make the lesson one of folding. Develop the number work as suggested in the folding for "Box for Shoe Pegs" in the September outline.

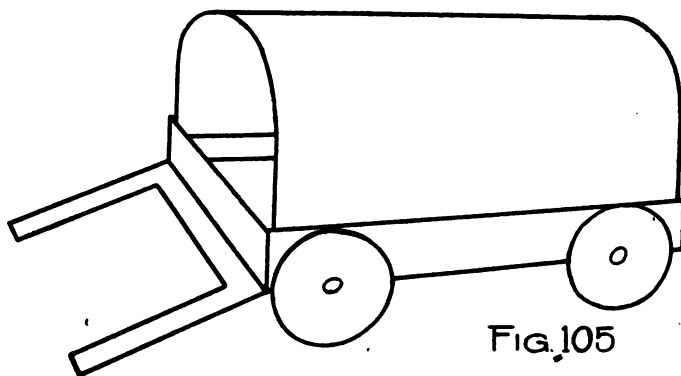


FIG. 105

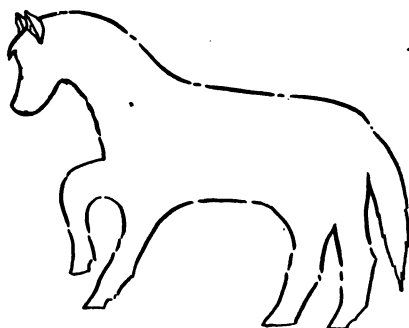


FIG. 105B

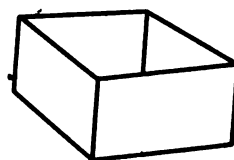


FIG. 105A

Covered Wagon (Prairie Schooner)

From a piece of 9x12-inch construction paper, fold a wagon box in the same way that the box for shoe pegs was folded. This makes a box $4\frac{1}{2}$ inches long when finished.

Pass to each child a rectangular piece of paper $4\frac{1}{2}$ x6 inches, and paste one short edge to one side of the box and the other short edge to the opposite side, thus making a covered wagon as shown in Fig. 105.

Provide each pupil with a circle of stiff paper, such as is used in the top of a milk bottle. Use this as a pattern, cut four wheels, and paste to sides of wagon. They may also be held in place by using small black collar buttons. With the point of the scissors, make small holes in the sides of the box where the wheels are to be placed. Through these holes force the small buttons and then through the center of the wheel.

Small Furniture

From scraps of paper, have the pupils construct, undirected, small pieces of furniture to load into the prairie schooners. When each child has finished his work, form a procession of all the horses and wagons in the room.

Doll House Furniture (Continued)

Keep this work as simple as possible. Use the ruler in the advanced first grade wherever possible. The beginners should not use the ruler, but simply fold, paste, and cut the squares.

Emphasis on the Use of the Ruler

So far as possible, each exercise should involve to some extent the use of the ruler. It will be observed that the exercises given in January and those for this month are a combination of measuring and folding.

Badges

Purpose:

To encourage patriotism.

Material:

Red, white, and blue construction paper.

Presentation:

The appearance of red, white, and blue paper inspires children to do their best. This is the first exercise in which the pupils have been asked to draw a square. In former exercises measurements were marked off on the long edges of the 9x12-inch paper, and the corresponding dots connected by a straight line. The square was produced by cutting on the straight line.

To Draw the Square:

First, draw a one-inch horizontal line. Place the end of the ruler so that it coincides with the line just drawn, and draw a one-inch vertical line. Place the end of the ruler so that it coincides with the vertical line just drawn, and draw another one-inch horizontal line. Lay the ruler across the ends of the two horizontal lines and connect by a straight line.

Badge:

Cut three one-inch squares from red, white, and blue paper. Allow the red square to remain the full size. Holding the blue and white together, cut off, freehand, a strip about $\frac{1}{4}$ inch from two sides. Allow the white to remain this size, but from the blue, cut freehand, another strip about $\frac{1}{4}$ inch from two sides. Arrange the squares as shown in Fig. 106.

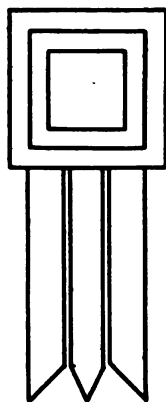


Fig106

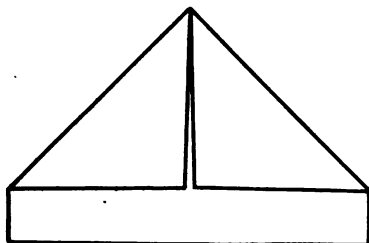


Fig107

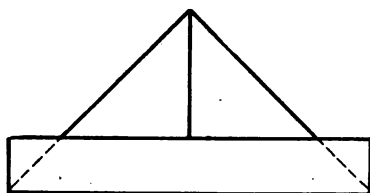


Fig108

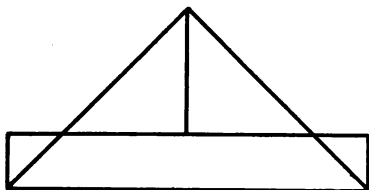


Fig109

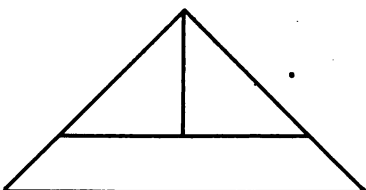


Fig110

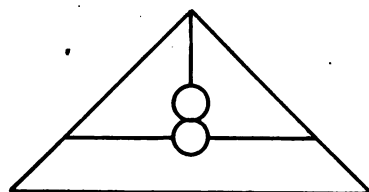


Fig111

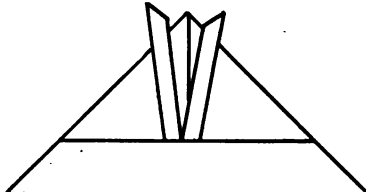


Fig112

Soldier Cap

Purpose:

To aid in making more real the lives of Washington and Lincoln. To create a live interest in the history for the month.

Material:

One sheet of white paper, 20x26 inches. Red, white, and blue construction paper.

Presentation:

Pass to each pupil one sheet of paper 20x26 inches. Almost any kind of paper may be used for the cap. Plain white is desirable. Place the paper so that the long edges are parallel with the front edge of the desk. Fold right and left edges together. Place the paper so that the creased edge is at the top. Fold right and left edges together. Unfold. Find crease thus formed. Fold upper edge of

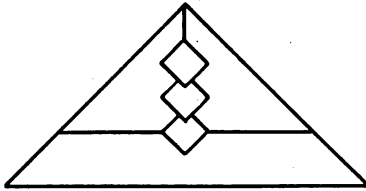


Fig 113

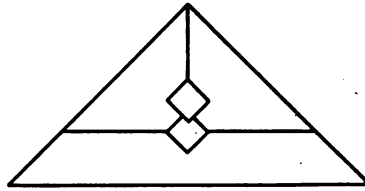


Fig 114

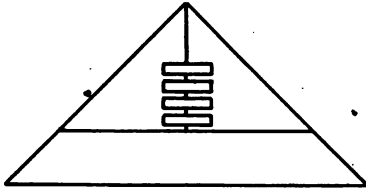


Fig 115

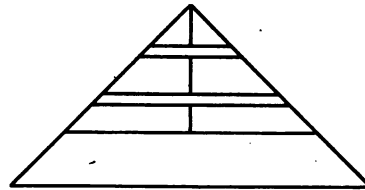


Fig 116

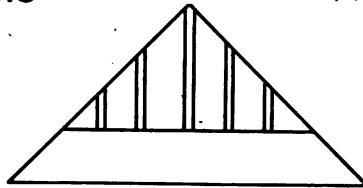


Fig 117

right half to crease; then left half. See Fig. 107. Fold front oblong at bottom upward along front edge of triangle; back oblong upward along back edge of triangle. Fig. 108.

Fold corners down, one over the other. Fig. 109. Fig. 110 shows finished cap. Figs. 111, 112, 113, 114, 115, 116 and 117 show a variety of ways for using red and blue with the white as a decoration.

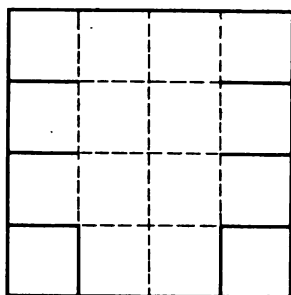


Fig 118

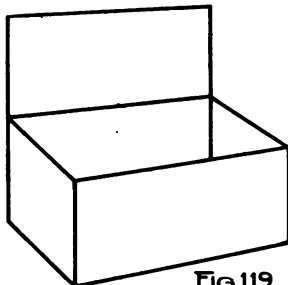


Fig 119



Fig 121

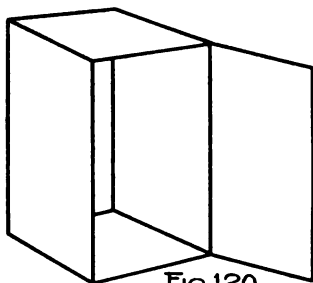


Fig 120

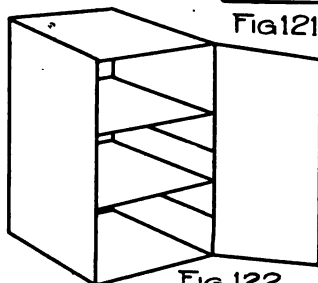


Fig 122

To Make a Trunk

Pass to each child a 9x12-inch piece of tinted construction paper. Place the paper so that the long edges are parallel with the front edge of the desk. Lay the ruler along the long edges and mark off nine inches. Connect corresponding dots by a straight line. Cut along line just drawn. Fold square as shown in Fig. 118. Cut as indicated by continuous lines. Fold squares into ends as in previous exercises, and paste. Fig. 119 shows the finished trunk.

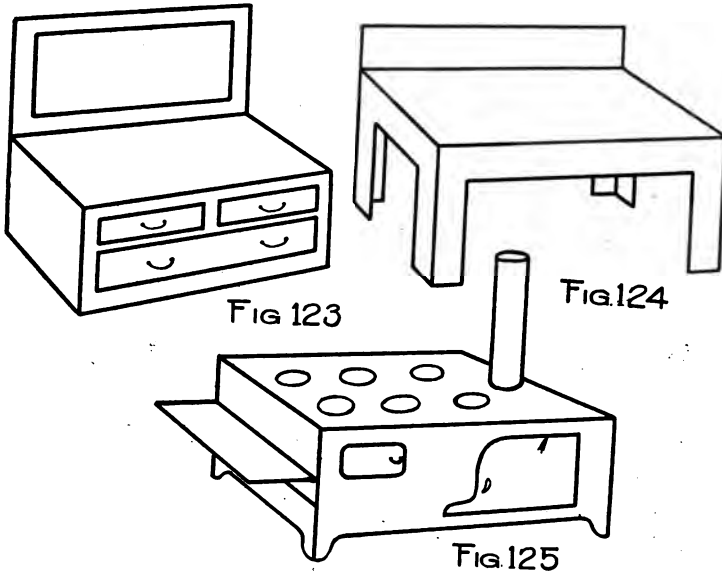
Do not fail to develop (or review) number work in each exercise.

To Make a Cupboard

Proceed as in the construction of the trunk. Turn the finished trunk on end, as shown in Fig. 120. Make two parts of the strips of squares cut away. Fold as shown in Fig. 121, and paste to the inside of the cupboard, as shown in Fig. 122.

To Make a Dresser

Measure, cut and fold a 9-inch square. Cut as indicated in Fig. 118. Fold and paste as shown in Fig. 123. Pencil marks only suggest drawers. A piece of silver paper or even white paper may be used for a mirror.



To Make a Serving Table

Measure, cut and fold a 9-inch square. Cut as shown in Fig. 118. Fold and paste as shown in Fig. 124. The construction of the serving table is the same as the dresser, with a few modifications. Legs are cut, and the back piece is only half as high as in the dresser.

To Make a Stove

Measure, cut and fold a 9-inch square, as in previous exercises. Cut away one row of squares. Fold into box-form. Cut doors and circles freehand from a darker tint of the same paper, and paste to the top and sides of stove. Fold and cut one of the small squares into halves. Fold again and paste this to front of the stove for a hearth. Cut the bottom as in Fig. 125.

To make the pipe, roll a piece of tinted construction paper around a lead pencil.

It is thought best to delay the rug weaving for the house another month.

Use only the time allowed for this work in your official schedule of time. Do all you can in the time allotted. That is all that will be expected.



Fig. 125A Doll House Complete.

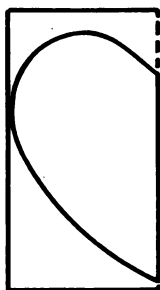


FIG. 126

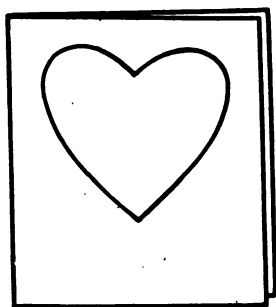


FIG 127

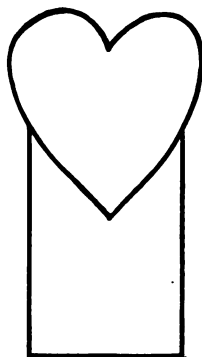


FIG 128

Valentines

Very interesting valentines may be cut by folding the paper, one, two or even three times. The folding suggested in December for a picture frame makes an interesting valentine.

Fig. 126 shows the folding and cutting of heart-shaped valentines.

Fig. 127 illustrates a rectangular piece of paper folded so the short edges come together. A heart is cut from one face. In the under half interesting scrap pictures or even pupil's cuttings may be pasted, so as to show in the heart opening.

Fig. 128 shows a heart pasted to a doubled rectangular piece of paper. Decorate with cuttings or scrap pictures. When opened it will stand like an easel.

Envelopes

After a review of envelope making, pass to the pupils manila drawing paper, or tinted construction paper, and have them construct envelopes for their valentines.

Use the suggestions given for envelopes to be made for seat work for previous months.

Printed Observation Sentences—One pkg. printed observation sentences.

Box for Sentences—Two pkgs. 9x12-inch construction paper.

Weather Record Box

The pupils of the first grade have now been in school five months. During this time they have gained a fairly large reading vocabulary. The up-to-date teacher has not failed during this time to use this vocabulary in varied ways.

To cultivate the powers of observation and to give the pupils an added opportunity of using their vocabulary, many first and second grade teachers have had their pupils observe on their way to school many of the weather conditions. At first the pupils make such reports orally to the teacher, who writes them, in as simple a way as possible, on the blackboard. After the pupils have become familiar with the various words used, short sentences may be printed, as shown in Plate 5. A box 6 inches long and 3 inches wide is constructed to hold six small boxes, as described in Fig. 129A. The small boxes, 3 inches long and one inch wide, are constructed from the layout shown in Fig. 129B. Fig. 129C shows finished record box with the six small boxes inserted in place.

A group of sentences is placed in each box. For example, all the sentences pertaining to the sky are placed in one box. All pertaining to the time of year, figures, days of the week and months

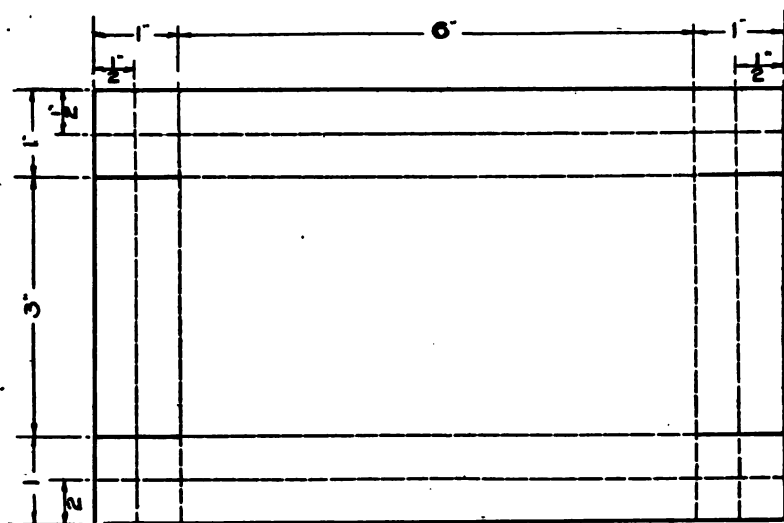


FIG 129A

of the year are placed in a second box. This is done to aid the child in finding the sentence desired.

It will be observed that the pupils build up by using complete sentences instead of single words.

Instead of always writing the observations, the class might use a set of printed weather sentences, selecting and laying on the desk those that will best describe the day. The set will consist of words, which may be used for the date, and sentences about the season, temperature, winds, clouds, etc., as follows:

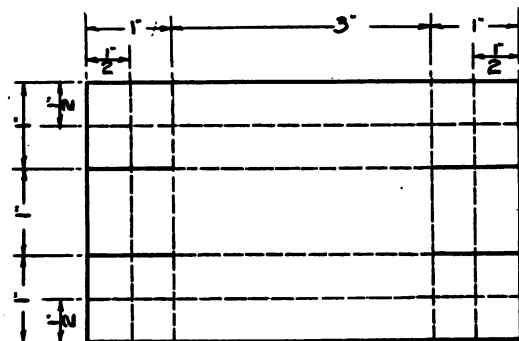


FIG 129B

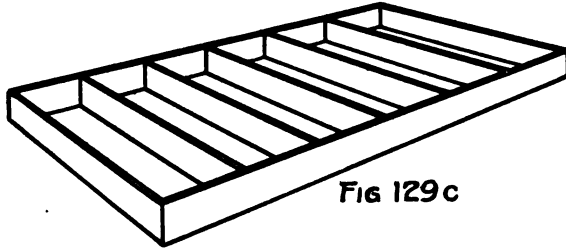


FIG 129c

Today is Monday, February the 2nd, 1921.

It is Winter.

It is very cold.

The sun is not shining.

The clouds are gray.

We have a North wind.

The trees are bare.

At the close of the period and the children have arranged their sentences on the desk, the teacher may walk up and down the aisles, asking some of the class to read the sentences. After the children have gained ability to lay the sentences rapidly, there will be time to either copy those used on paper or to pass to the board and write from memory.

Materials for February:

Cuttings—Scraps may be used.

Covered Wagon—1 pkg. 9x12-inch construction paper.
50 pieces of rectangular white paper.

Small Furniture—Use scraps.

Badges—1 pkg. white 6x9-inch construction paper.
1 pkg. red 6x9-inch construction paper.
1 pkg. blue 6x9-inch construction paper.

Soldier Cap—50 sheets white paper, 20x26 inches.
Red, white and blue scraps for decoration.

Trunk—1 pkg. 9x12-inch construction paper.

Cupboard—1 pkg. 9x12-inch construction paper.

Dresser—1 pkg. 9x12-inch construction paper.

Serving Table—1 pkg. 9x12-inch construction paper.

Stove—1 pkg. 9x12-inch construction paper.

Valentine—1 pkg. 9x12-inch construction paper for envelopes.
(Cut valentines from scraps.)

The sun is shining.
 The sun is not shining.
 The clouds are gray.
 The clouds are white.
 The clouds cover the blue sky.
 There is no sunshine.
 The sky is blue.
 There are a few white clouds.

The trees are bare.
 The leaves are on the trees.
 The leaves are green.
 Some leaves are red.
 Some leaves are brown.
 Some leaves are yellow.
 Some leaves are red and yellow.

This is Spring.
 This is Autumn.
 This is Winter.
 This is Summer.

The birds have come.
 The birds are going South.
 The birds are making nests.
 The birds are singing.
 The flowers are blooming.

We had a frost this morning.
 The frost is white.
 We had dew this morning.
 It is raining.
 It is snowing.
 It is cold this morning.
 It is very cold.
 It is cool.
 It is very warm.
 It is very warm this morning.

The wind is from the east.
 We have a north wind.
 The wind is from the south.
 We have a west wind.
 We have a northwest wind.
 We have a northeast wind.
 The wind is from the southeast.
 The wind is from the southwest.

Today is 1 1 1 2 2 3 4 0 0 5 6 7 8 9 9 1912

Monday	Thursday	Sunday
Tuesday	Friday	
Wednesday	Saturday	
January	May	September
February	June	October
March	July	November
April	August	December

Plate 5 Printed Weather Sentences.

MARCH

While March is still one of the cold months of the year there is something about the name that suggests spring. Lovers of flowers begin to talk about their gardens and the kinds of seeds best suited to the soil and climate of their immediate section of the country. The birds begin to arrive from the South, which adds to the interest of the coming spring.

Cutting

Trees with and without leaves, garden implements, rake, shovel, spade, hoe. Cutting of fences, birds, bird-house. Early wild or cultivated flowers for flower pot modeled in clay.

Clay

Modeling of animals, horse, cow, pigs, flower pot.

Pin Wheel

The March winds suggest the pin wheel. Children by this time are learning the directions.

Purpose:

To interest the children in weather vanes in order to determine directions of wind.

To aid in teaching cardinal points.

To begin to teach pupils to observe and to draw conclusions concerning their observations.

To create an interest in other weather vanes.

Material:

One 6-inch square of manila drawing paper or tinted construction paper, cut by the advanced pupils. Beginners are to be furnished with the squares.

One package of ordinary pins.

One piece of No. 6 reed, about 7 inches long, or a colored stick.

Presentation:

Up to this time the pupils have cut 9-inch squares by measuring along the edges of a 9x12-inch sheet of paper. In the construction of the pin wheel, they draw a 6-inch square. This may best be done by passing to each pupil a 6x9-inch piece of paper, measuring 6 inches along the 9-inch edges, and connecting the dots by a straight line.

Draw or fold diagonals of square as shown in Fig. 130. Along each diagonal and about one-half inch from center, place dotted lines. Fig. 131.

Cut along diagonals until the dotted line is reached. Turn every

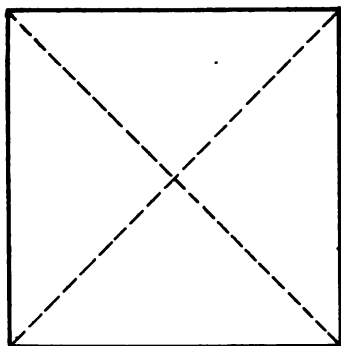


FIG130

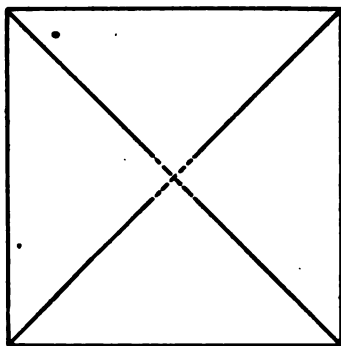


FIG131

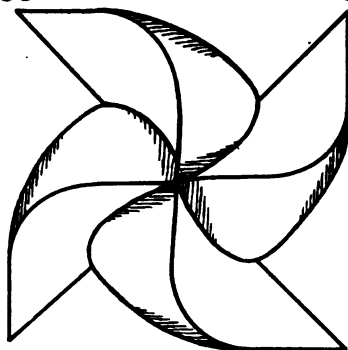


FIG132

other point to the center; and hold in place with pin, as shown in Fig. 132. The point of the pin is forced into the end of the reed, or stick, which is very porous, thus permitting the pin to enter without resistance.

To make the pin wheel spin, point directly outward and run, or hold upward and blow.

Group Problems—The Farm

One of the most interesting group problems for this season of the year is the "farm." Cut the trees and construct the house, barns, corn cribs, chicken coops, etc., as suggested in previous outlines. All building construction may be based on the construction of the house.

To Make the Fences

Pass to the pupils rectangular pieces of paper $1\frac{1}{2} \times 3$ inches. Fold in halves lengthwise; unfold. Fold each long edge to center crease. While folded cut a long, narrow strip as indicated by dotted lines in Fig. 133. When unfolded the cutting looks like Fig. 134.

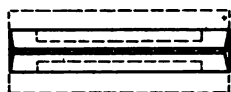


Fig 133

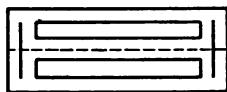


Fig 134

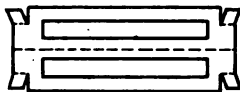
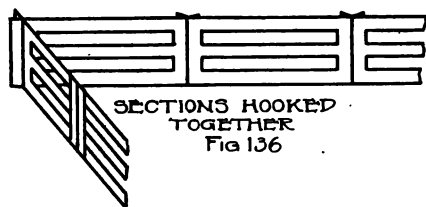


Fig 135



SECTIONS HOOKED
TOGETHER
Fig 136

Fold into halves again and cut slits as shown at the ends of Fig. 134.

Cut another section of the fence as in Fig. 133. Instead of cutting slits from the folded edge, cut from the open edge toward center, as indicated in Fig. 135. Fold the small flaps so they may be slipped through the slit. When through unfold the flaps as shown in Fig. 136. Construct other sections until enough have been made to enclose the various fields.

Other Exercises Without Paste

Many other exercises, such as chairs, garden table, settees for the lawn, small coops for the chickens, trough for the pigs, etc., may be made by slitting the paper as above suggested.

Colored sawdust may be used in various ways to indicate fields of growing grass, and various grains. Even flower beds may be made of the brighter colors.

Sawdust may be colored by placing the dye in water. When thoroughly dissolved the sawdust may be put into the water and allowed to stand for several hours. When removed it may be spread on heavy paper to dry.

Chicken Coop

Pass to each pupil a rectangular piece of paper 8x4 inches. Advanced first-grade pupils should measure and cut the rectangle.

Fold into halves by folding the short edges together; cut slits in sides about one-half inch from open edges. Through these slits pass strips anywhere from $\frac{1}{4}$ inch to $\frac{1}{2}$ inch wide. See Fig. 137.

Wagon

Purpose:

To interest the pupils in clean-up day and gardening. To create a desire to make something for a younger brother or sister. To encourage incidental number work.

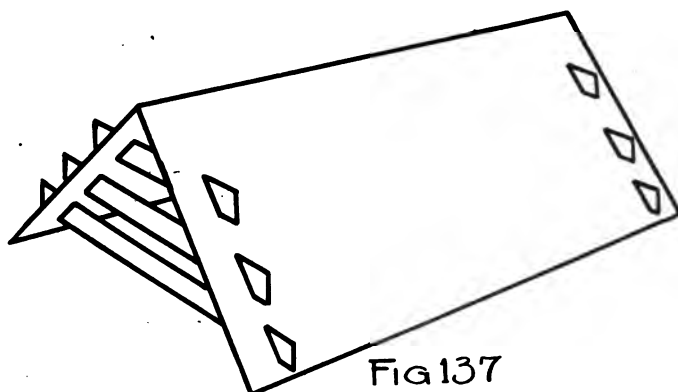


Fig 137

Material:

1 pkg. (50 sheets) of tinted construction paper 9x12 inches.
Small wooden collar buttons.

Presentation:

In order that the pupils may work intelligently, it is necessary that they should know what they are going to construct. It is, therefore, recommended that the teacher, in order that she may understand its construction and make it possible for her to ask the pupils intelligent questions leading to the construction of the wagon, construct one herself, and present it to the class. Have them name the parts of the wagon—the box, seat, dashboard, thills, axle, wheel, hub, etc.

What part of the wagon looks like anything constructed in previous lessons?

If necessary take the wagon apart and show that it is the same in construction as the boxes folded for various lines of seat work.

To Make the Wagon

Measure off 9 inches on the long edges of the 9x12-inch piece of construction paper. Connect dots by a straight line. Cut along line just drawn. The piece cut away may be reserved for the wheels of wagon.

Proceed to construct the wagon box of the 9-inch square in the same way as other boxes were constructed, with double sides and ends.

If necessary review the number while folding, as suggested in previous exercises.

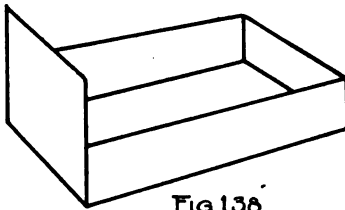


Fig 138



Fig 139

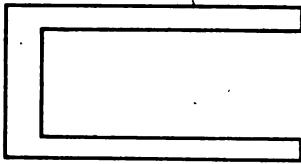


Fig 140

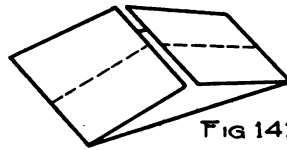


Fig 141

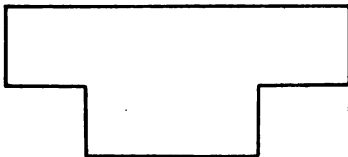


Fig 142

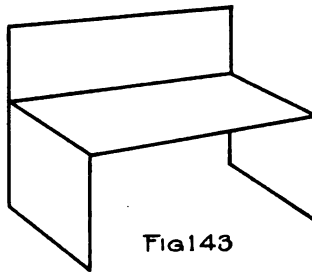


Fig 143

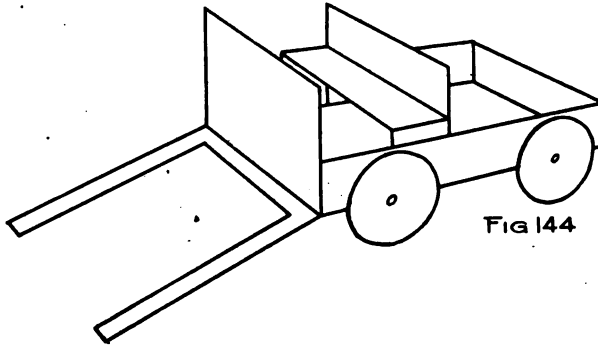


Fig 144

The dashboard is made by allowing the square at one end to paste to one end of the box, as shown in Fig. 138.

The thills and seat are made of the row of squares cut away. Cut the strip of four squares into two parts, so there are two squares in each. To make the thills, fold one of the above pieces so the long edges come together, and cut as indicated by dotted lines in

Fig. 139. When unfolded it looks like Fig. 140. The thills are now pasted to the box as shown in Fig. 144.

The wagon seat is made of the remaining piece of two squares. Fold the two short edges in to center crease, as shown in Fig. 141. Cut as indicated by dotted lines. Fig. 141. When cut, the seat looks like Fig. 142. Fold as shown in Fig. 143.

In cutting the wheels, use a pattern. The paper tops used as stoppers in milk bottles make very good patterns. Fig. 144 shows the completed wagon.

Number Based on the Construction of Wagon

How long is one edge of the square? (Nine inches.)

How long are two edges of the square? Three? Four edges? Count by nines to 27; to 36.

Two edges together are what part of the distance around the square?

If 18 inches is one-half the distance around the square, how many inches around the entire square?

After the paper is folded into 16 squares, how many squares in 1 row; 2 rows; 3 rows; 4 rows?

Count by fours to 12; to 16.

How many squares in half the paper?

If the number, in connection with the construction of the various exercises, has been developed each time, the pupils should by this time recognize the fact that 1-2, 2-4, 4-8, and 8-16 are the same.

After cutting away one row of four squares, how many squares remain?

Holding the paper by the long edges, how many squares are there in one row? How many in two rows; in three; in four?

Count by threes to 12.

Number Book

Material:

4 sheets manila drawing paper 9x12 inches.

1 sheet tinted construction paper 9x12 inches.

1 No. 12 or No. 14 darning needle.

Carpet warp.

Purpose:

To give the pupils an idea of simple book construction.

To aid the pupils in keeping systematically a few number facts.

Presentation:

Pass to each pupil four sheets of 9x12-inch manila drawing paper, and one sheet of 9x12-inch tinted construction paper. Put the

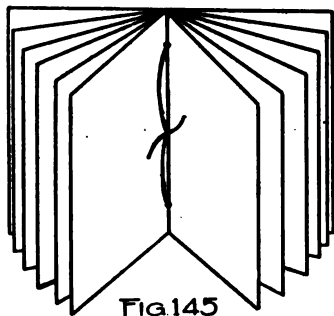


FIG 145

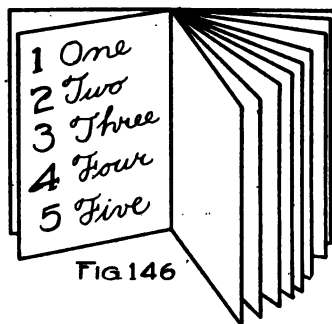


FIG 146

short edges of each sheet together and crease through the middle with the handle of scissors, as suggested in previous exercises. When all are creased, open the sheets and place them one upon another, putting the colored sheet on the outside.

Tie the book with a piece of carpet warp. This may be done by threading the darning needle, forcing it from the inside through the leaves on the crease, to the outside of the book. Taking a long stitch, say about three inches, force the needle back to the inside again. Tie on the inside of the book with a hard knot. Fig. 145.

Hektograph or cut figures from an old calendar. Paste the figures from one to ten in the book, as shown in Fig. 146. As new figures are learned paste them in the book. After each figure or Roman numeral write the name.

Dominoes

In many school systems pupils are admitted to the first grade twice a year. In such a case it becomes necessary to plan work for the beginners. The dominoes adapt themselves very nicely not only to beginners but also to the advanced first grades.

Box for Dominoes

Pass to each pupil a 6-inch square of tinted construction paper. Fold into sixteen small squares. For remainder of construction see direction given for box for the pegs, September outline.

Cover for Box

Pass to each pupil a 6½-inch square of tinted construction paper. Proceed to construct the cover the same as box.

How to Use the Dominoes

For a beginning class each domino may be cut in two, showing only one group and not the combination.

1. These may be matched, laying all the ones together; all the twos, threes, etc.

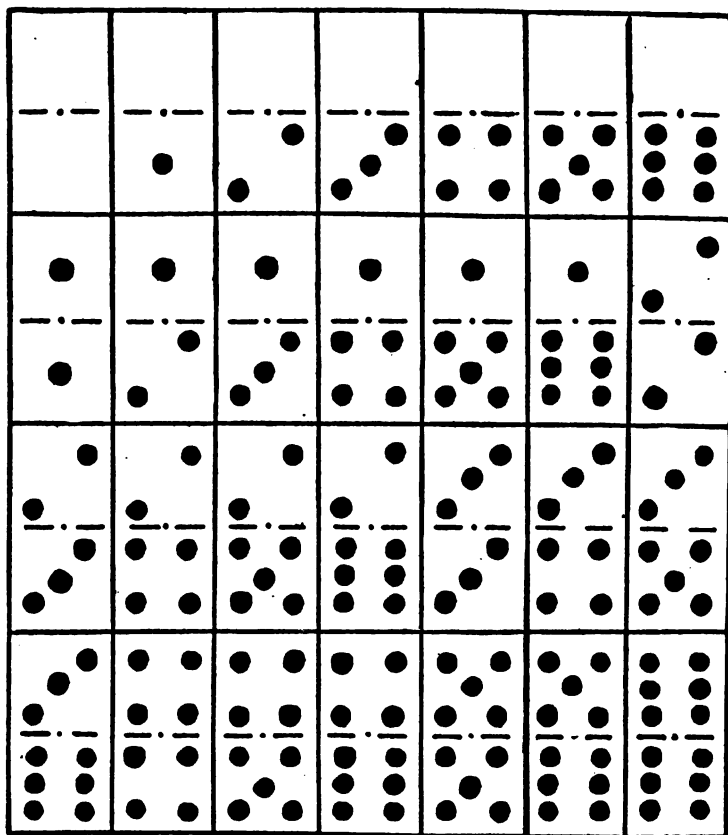


Fig. 147 Domino Card.

2. They may be laid so as to count from one to six.

3. With an older class, it is better to use the dominoes without cutting in two.

Select one domino and lay it in the center of the desk. Find other dominoes that will match either end and lay those. Match the spots on the ends and work as in the regular domino game until all the dominoes are used. Follow with a recitation in naming the combinations shown in the arrangement. This will give drill in multiplying by two.

4. Lay with all the blanks in a horizontal row and with ones at the top, letting the lower row count from one to six. The third row will have the twos at the top with the lower row counting from two to six.

The fourth row will have threes at the top, with the lower row counting from three to six.

The fifth row will have fours at the top, and four to six on the lower row.

The sixth row will have fives at the top, and five and six at the bottom.

Follow this with a recitation, having the children count one to six.

5. All the combinations of numbers to twelve are found on the dominoes. Write the combinations on the board and have the children arrange dominoes in order.

0	0	1	1	0	2	3	0	2	4	0	3	4
1	2	1	2	4	2	1	5	3	1	6	3	2
—	—	—	—	—	—	—	—	—	—	—	—	—
1	2	2	3	4	4	4	5	5	5	6	6	6
5	1	4	5	4	5	6	5	6	5	6	6	6
1	6	3	2	4	3	2	4	3	5	4	5	6
—	—	—	—	—	—	—	—	—	—	—	—	—
6	7	7	7	8	8	8	9	9	10	10	11	12

6. Lay so as to have only the six show. Lay double six, then slip half of each other domino that shows six under the double.

Begin with double five and lay so as to show the seven fives remaining.

Lay double four and slip under it the blank, one, two, three, so as to show the six fours.

Lay double three and slip under it the blank one and two, so as to show five threes.

Lay double two and slip under the blank and one, leaving four twos.

Lay so as to show three ones.

Double blank is the only domino left.

Follow this with a lesson on counting spots shown, counting by ones, twos, threes, etc.

7. Lay so as to show a vertical row of ones by starting with double one and slipping under the number shown on the domino with each of the other ones. Make rows showing the twos, threes, fours, fives, and sixes.

8. Lay so as to make the dominoes count 1, 2, 3, 4, 5, 6 in vertical rows. This can be done by covering up part of some of the dominoes.

9. The following is an interesting way to use the cards: Have the pupils use the domino as a pattern, as suggested in Ex. 10. Place

dots instead of figures, and beneath each have the pupils write the combinations and differences:

4 and 1 are—	4 and 2 are—
1 and 4 are—	2 and 4 are—
5 less 4 is—	6 less 4 is—
5 less 1 is—	6 less 2 is—
4 and 3 are—	4 and 4 are—
3 and 4 are—	2 fours are—
7 less 4 is—	8 less 4 is—
7 less 3 is—	

10. Use the domino as a pattern for drawing a rectangle. Lay domino across the end of the rectangle and draw line dividing rectangle into two squares. Write figures in each square to correspond with the number of dots on each domino.

11. Use the domino as a pattern for drawing a rectangle and write in it the figures, showing combination and sum of dots on each domino, or write combinations without the rectangle. These may be written in two ways:

$$\begin{array}{r} 6 \\ 4 \\ \hline 10 \end{array} \quad 4+6=10.$$

After the children have learned to make figures, let them write the combinations in both ways.

1	2	2	3	3	6	1+2=3	2+2=4	3+2=5
1	1	2	1	2	1	1+1=2	3+1=4	4+1=5
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>			
2	3	4	4	5	7			

Materials for March:

Cuttings—Use scraps.

Pin Wheel—1 pkg. 6x9-inch tinted construction paper.

50 common pins.

50 pieces No. 6 reed each 7 inches long.

Fences—Scraps of paper.

Chicken Coop—Scraps of paper.

Wagon—1 pkg. 9x12-inch construction paper.

Number Book—2 pkgs. 9x12-inch manila drawing paper.

1 pkg. 9x12-inch construction paper.

2 pkgs. No. 12 darning needles.

1 small spool carpet warp.

Dominoes—1 pkg. 50 sheets. Fig. 147.

Box for Dominoes—1 pkg. 9x12-inch construction paper.

APRIL

It is difficult to determine which school month of the year is most interesting from the construction point of view. April brings with it all the Easter interests and not only this but also the construction of baskets to be used on "May Day."

Cutting and Tearing

The freehand cutting and tearing for this month naturally center around the Easter interests. The class should cut flowers for the May baskets and rabbits and chickens for Easter greetings.

Clay

Model rabbits and chickens.

Easter Basket

Pass to each beginning first-grade pupil a 9-inch square of tinted construction paper and fold into sixteen small squares as shown in Fig. 148. As the folding is being done, review the number work with

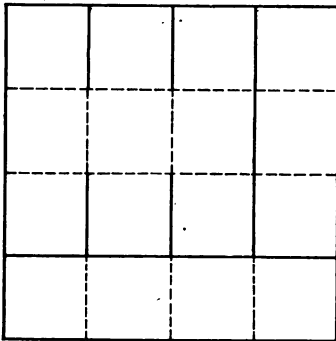


Fig. 148

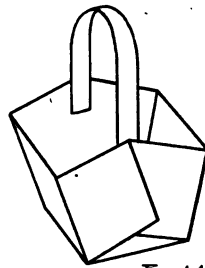


Fig. 149

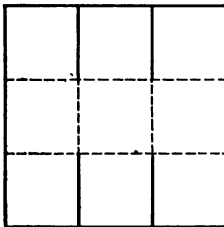


Fig. 150

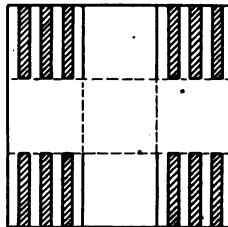


Fig. 151

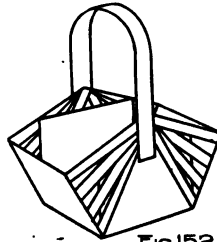


Fig. 152

the beginners as suggested in the folding of the box for shoe pegs in the September outline.

Cut on all continuous lines as shown in Fig. 148. Fold and paste into shape as shown in Fig. 149. Cut the handle freehand and paste as shown in Fig. 149.

Fig. 152 shows a modified form of the basket shown in Fig. 149 and is best constructed by the pupils of the advanced first grade. From a piece of 6x9-inch tinted construction paper cut a 6-inch square, and divide it into nine squares as shown in Fig. 150. This is not so difficult as it might seem, since no measurement is less than two inches.

It is always understood that all continuous lines are cut. Fig. 151 shows that each square in the four corners is cut into seven strips freehand; that is, the width of the strips is not measured. The strips are still attached to the middle square. Cut away every other strip, beginning with the second strip from the top or bottom. Fig. 151 indicates the ones to be cut away. The basket is now folded into shape, the free ends of the strips being allowed to overlap, and pasted to the center square at each side, Fig. 152.

The handle is cut freehand and pasted to the outside of the basket, thus covering the overlapped strips as shown in Fig. 152.

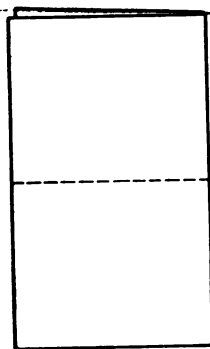


Fig. 153

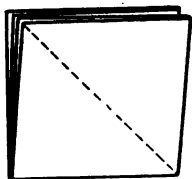


Fig. 154

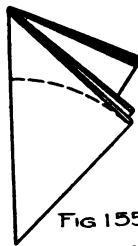


Fig. 155

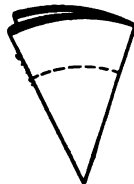


Fig. 156

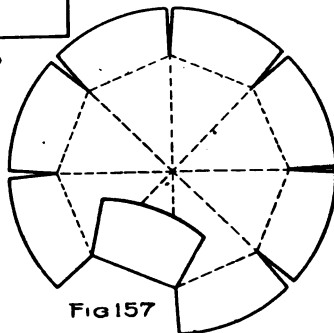


Fig. 157

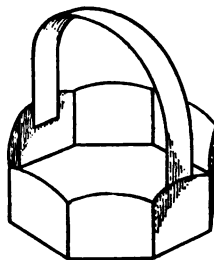


Fig. 158

Easter Basket

Pass to each pupil a 4, 6, or 8-inch square of tinted construction paper. From this square a circle is to be cut. To do this fold first into halves, Fig. 153, then quarters, Fig. 154, and then eights, Fig. 155.

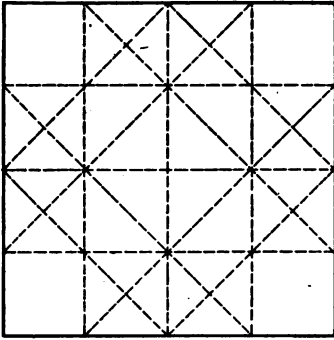


Fig. 153

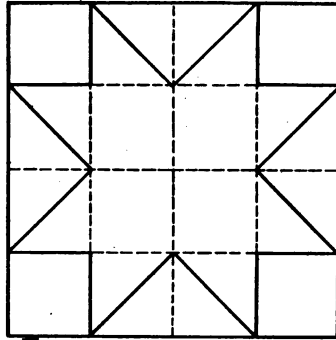


Fig. 154

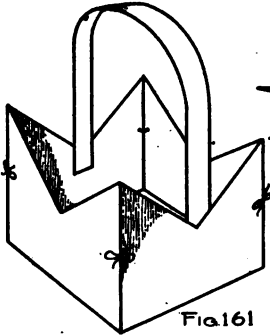


Fig. 161

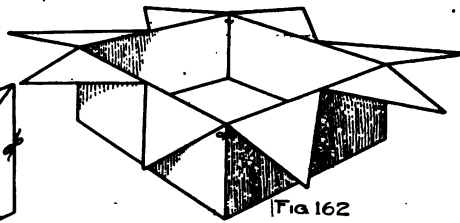


Fig. 162

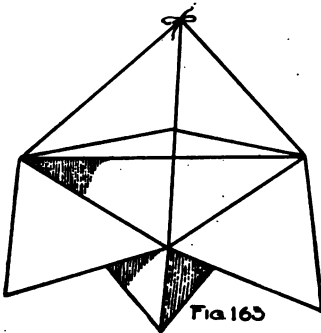


Fig. 163

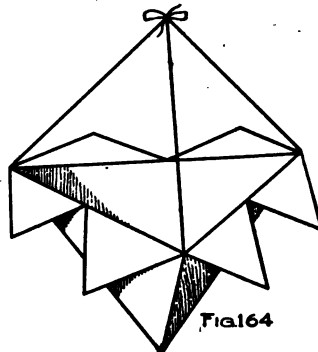


Fig. 164

Cut as indicated by dotted lines, Fig. 155. Draw a curved line about one inch from outer edge as shown in Fig. 156. Before unfolding, cut along creases to the line just drawn. Unfold. Fold back each section of the folding, as far as the cuts will permit, Fig. 157. Tie or paste the edges together. Cut handle freehand and paste in place, Fig. 158.

Easter Basket

Fold a 9-inch square into sixteen small squares. Review the number work in this folding, as suggested in previous exercises. Fold each corner to the center, and then to the corner beyond the center. Fig. 159. Cut as indicated by continuous lines shown in Fig. 160. Paste or tie as shown in Fig. 161.

It will be observed that the creases indicate very definitely the lines to be cut. This may be a little confusing to the pupils at first, but if the teacher will work out the folding before giving it to the class more definite directions can be given.

If so desired the points may be turned outward as shown in Fig. 162.

Figs. 163 and 164 show other hanging baskets made from foldings. These were mentioned in the December outline to be used as Christmas tree decorations.

Any of the baskets made in December are quite suitable for May or Easter baskets.

It will be remembered that May baskets as well as the Easter baskets are made during this month.

Bird House

Material:

One sheet of 6x9-inch construction paper.

Purpose:

To interest the pupils in the care and feeding of birds.
Incidentally, to teach number, skill, neatness.

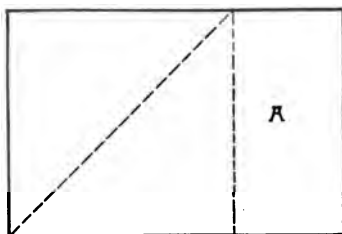


Fig. 165



Fig. 166

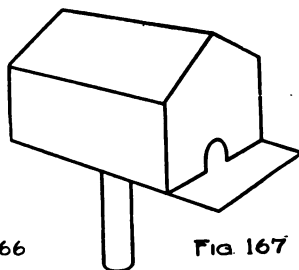


Fig. 167

Presentation:

After a general talk on the care and feeding of birds, present the finished bird house. Call attention to the slanting roof, which is an advantage in shedding rain. The projection in front gives the bird a place to rest and makes it easy to enter. Call attention to the openings of bird houses. The size of the openings depends upon the kind of bird that is expected to live in the house. Tell about some birds driving other birds away if the opening in the house is large enough to admit all sizes of birds.



Fig. 168 Finished Card—Verse.

Pass to each child a 6x9-inch piece of construction paper. Place the ruler along the long edges of the paper and place dots 4 inches from the short edge. Connect dots by a straight line and cut on same. We now have a rectangle 4x6 inches. How much longer is the

rectangle than it is wide? What is the length of the two short edges together? What is the length of the two long edges together? What is the length of one short edge and one long edge together? How many inches around the rectangle?

To construct the bird house fold one short edge so it coincides with four inches of the long edge. This gives the diagonal as indicated by dotted line in Fig. 165.

Fold the rectangle marked "A" over on to the square and proceed to fold the square into sixteen small squares. Allow the part "A" to unfold and of the sixteen squares cut and fold the house as directed in a previous outline. The part "A" forms the bottom and a projection to the front and back. Cut away part of each projection. Allow the one in the back to fold upward and paste to the end of the house. The corners of the one in front may be rounded.

From the remaining paper cut a piece of 2x6 inches. Apply paste to a good portion of the strip and roll around a lead pencil. This is similar to the way the logs were made in the construction of the log house. Remove pencil and allow the tube to dry. When dry cut down to about $\frac{1}{2}$ or $\frac{3}{4}$ inch as shown in Fig. 166. Press these strips outward and paste to bottom of house as shown in Fig. 167.

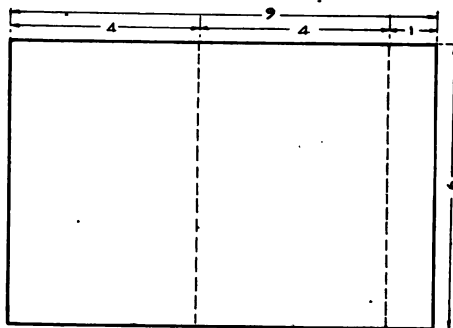


FIG. 169

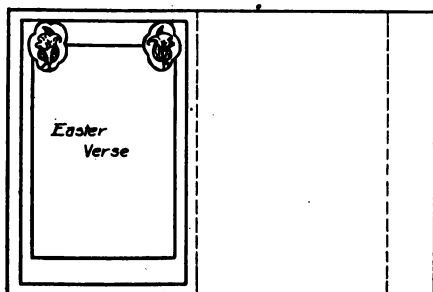


FIG. 170

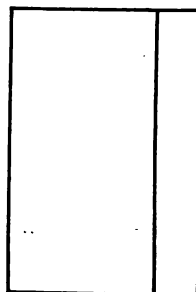


FIG. 171

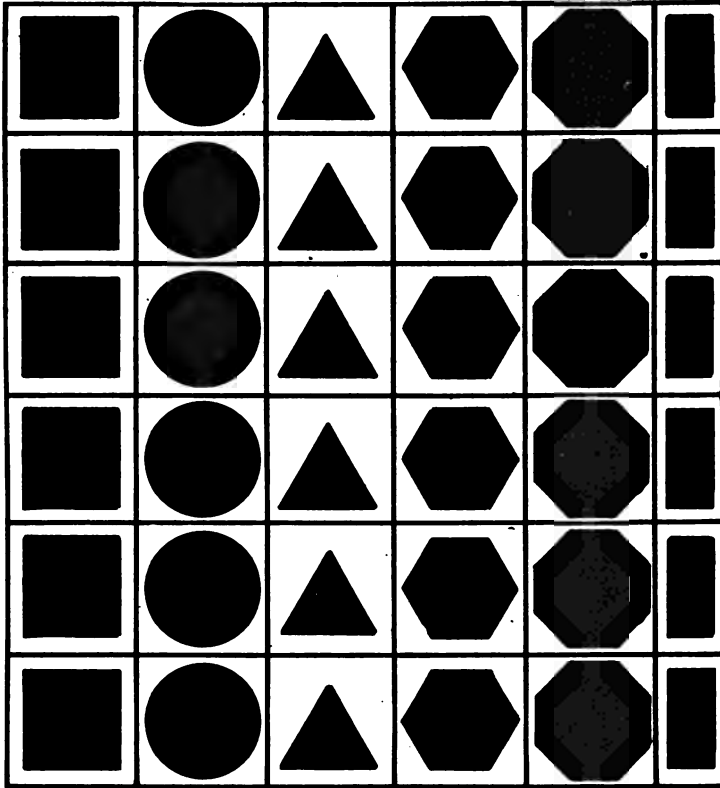


Fig. 172 Geometric Forms (Colored)

Easter Cards

Most attractive Easter cards may be made by combining the various tinted construction papers.

Fig. 168 shows a finished card and folder. Fig. 169 shows the drawing of the folder. Fig. 170 shows verse printed on a rectangular piece of construction paper of one tint pasted to a larger rectangle of another tint, and then to the inside of the folder. Fig. 171 shows the folder when closed.

Very interesting Easter stickers of little chickens and flowers may be found in the market.

Envelope

From construction paper make an envelope into which the colored geometric forms used in the geometric game may be placed when not in use.

<i>square</i> square	<i>oblong</i> oblong	<i>circle</i> circle	<i>triangle</i> triangle	<i>hexagon</i> hexagon	<i>octagon</i> octagon
<i>red</i> red	<i>violet</i> violet	<i>blue</i> blue	<i>green</i> green	<i>yellow</i> yellow	<i>orange</i> orange
<i>orange</i> orange	<i>red</i> red	<i>violet</i> violet	<i>blue</i> blue	<i>green</i> green	<i>yellow</i> yellow
<i>yellow</i> yellow	<i>orange</i> orange	<i>red</i> red	<i>violet</i> violet	<i>blue</i> blue	<i>green</i> green
<i>green</i> green	<i>yellow</i> yellow	<i>orange</i> orange	<i>red</i> red	<i>violet</i> violet	<i>blue</i> blue
<i>blue</i> blue	<i>green</i> green	<i>yellow</i> yellow	<i>orange</i> orange	<i>red</i> red	<i>violet</i> violet
<i>violet</i> violet	<i>blue</i> blue	<i>green</i> green	<i>yellow</i> yellow	<i>orange</i> orange	<i>red</i> red

Fig. 173 Geometric Board.

The envelope may be constructed similar to the one made in September and used as a "cutting envelope." Use the 12x17-inch construction paper.

Geometric Game

Fig. 172 shows six different geometric forms. The forms are printed in six primary colors. Allow the pupils to cut around the outer edge of each form.

Fig. 173 shows the board on which the geometric forms are to be placed. In the top row of rectangles, are found the names of the various forms in both print and script.

In the squares just under these names the pupils will place the form asked for in print and script and also the right color. This

makes a most fascinating line of seat work and adds to the child's vocabulary—new words in both print and script.

Other Ways of Using the Board

The board may be used on which to place other counting material, such as shoe pegs, lentils, seeds, etc.

The colored geometric forms may be used in laying borders and other designs.

Materials for April:

Cuttings—Use principally scraps.

Easter Baskets—2 pkgs. tinted construction paper.

Bird House—1 pkg. 6x9-inch construction paper.

Easter Sentiments—1 pkg. of 50.

Geometric Game—1 pkg. of 50 colored sheets. Fig. 172.

Geometric Board—1 pkg. of 50 sheets. Fig. 173.

Envelope for Geometric Game—1 pkg. 12x18-inch construction paper.

MAY AND JUNE

This is the last of the series of chapters on primary construction work for the first grade. The fact that a few suggestions may seem out of season is due to the fact that each month has been so full that space and time did not permit their appearance in the earlier chapters.

Cutting and Tearing

This season of the year so abundantly furnishes suggestions for cutting and tearing—jumping rope, playing with jackstones, playing with marbles, etc. The spring vacation has just closed and with it came numerous activities pursued by the children. Moving day is full of suggestions of cuttings.

Clay Modeling

Any of the above named suggestions are equally suitable for the work in clay, which should precede the cutting.

Badges

Badges similar to those constructed for Lincoln's and Washington's birthdays may again be made for Memorial Day. For directions see February outline.

Flower Pot and Plant

Purpose:

- To interest the pupils in nature drawings and construction.
- To afford opportunity in color combinations.
- To give a basis for blackboard language and reading.

Material for the Room:

- 1 pkg. of 6x9-inch construction paper.
- Scraps of tinted construction and engine paper.

Presentation:

It is usually easy to interest pupils in nature forms. A potted plant in bloom in the schoolroom would add much to the interest and aid the pupils in the right forms of construction. Choose a simple form such as the tulip.

To Make the Flower Pot

Fold a piece of 6x9-inch construction paper into halves lengthwise and cut on crease. Place the ruler along the long edges of one

of the halves and place points, four inches from short edge. Connect points by a straight line and cut. Each pupil now has a rectangle 4x3 inches.

A few practical questions on number may be asked at this time:
How long is the rectangle (oblong)?
How wide is the oblong?

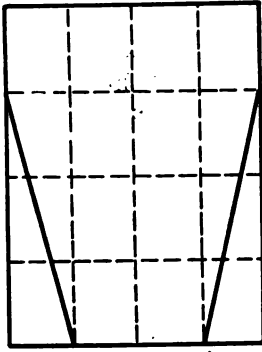


FIG 174

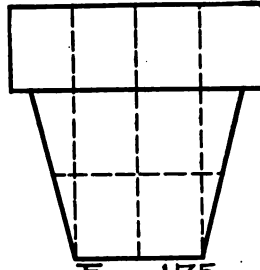


FIG 175



FIG 176

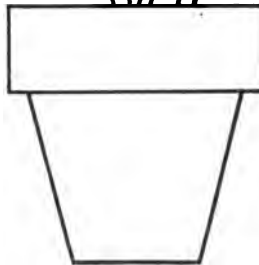


FIG 179

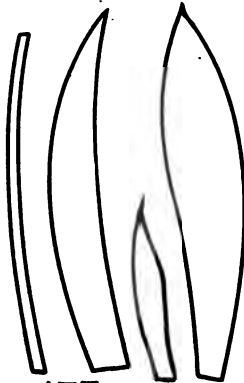


FIG 177 FIG 178

How much longer is it than it is wide?

Draw a line equal in length to the two short edges put together.

Draw a line equal in length to the two long edges put together.

How many inches is it half way around the oblong?

How many inches all the way around the rectangle?

Fold the oblong just cut into sixteen equal parts, Fig. 174. Draw the continuous slanting lines, as shown in Fig. 174.

Review the number work suggested in previous exercises.

Cut on the continuous slanting lines and fold the top row oblongs over onto the remainder of the folding, Fig. 175.

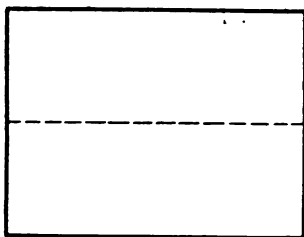


FIG 180



FIG 181

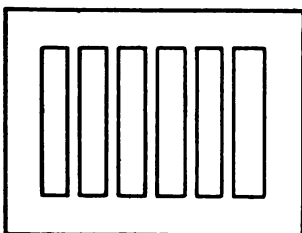


FIG 182

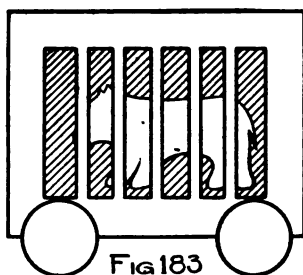


FIG 183

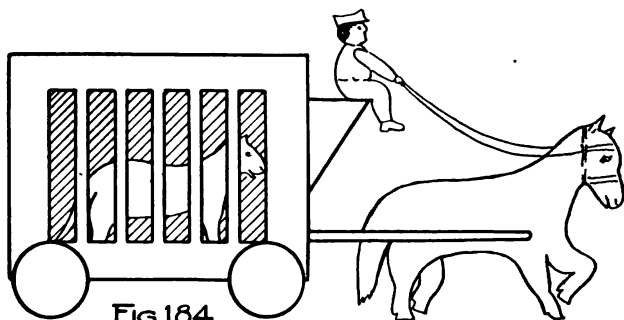


FIG 184

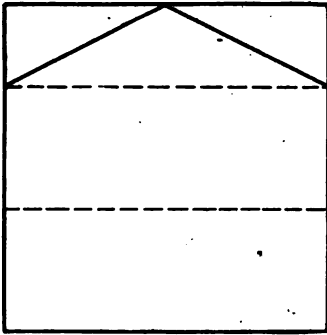


Fig 185

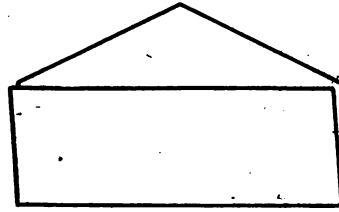


Fig 186

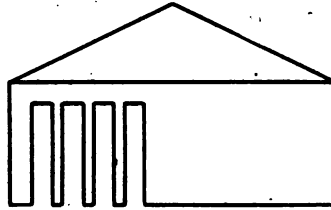


Fig 187

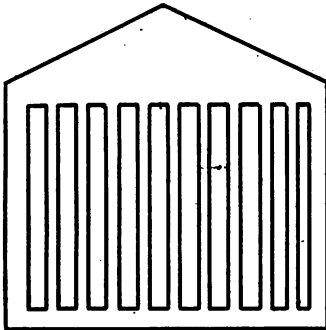


Fig 188

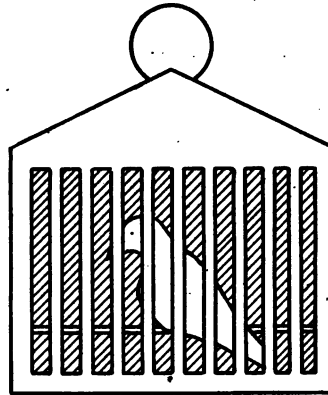


Fig 189

To Cut the Flower

From a piece of colored paper cut freehand the flower, as shown in Fig. 176.

Cut the stem of green paper, Fig. 177.

The Leaves

From green construction paper have the pupils cut the leaves, as shown in Fig. 178.

Assembling the Parts

Paste the flower pot to a 9x12-inch piece of construction paper about two inches from one of the short edges.

Assemble the parts, as shown in Fig. 179.

Group Problem—The Circus Parade

There is no group problem so interesting to pupils of the lower grades as that of the Circus Parade.

The work in this connection should be made as simple as possible.

No attempt should be made to construct the cages in three dimensions. The pupils should be allowed to cut the cages from one piece of paper.

Cutting Animals

Have the pupils cut freehand such animals as may have been seen at the park or the circus.

Cutting the Cage

Pass to each pupil a piece of construction paper 4x3 inches. Fold in center as Fig. 180. Cut as shown in Fig. 181. Unfold and Fig. 182 is the result. Cut the wheels by using a milk bottle top for a pattern.

Assembling the Parts

On a piece of black or any other dark construction paper 4x3 inches paste the animal. Over the animal paste the cage and to the cage paste the wheels, as shown in Fig. 183. This may be enlarged upon by cutting horses and pasting so as to be drawing the cages. (Fig. 184.)

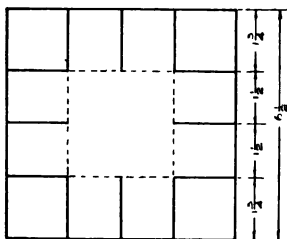


Fig. 190

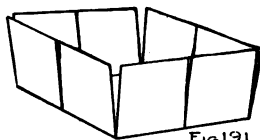


Fig. 191

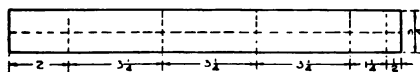


Fig. 192

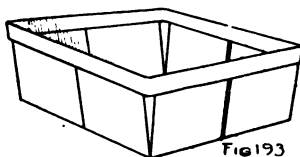


Fig. 193

A driver might be cut and placed on the cage. Lead pencil lines may be drawn from the horses to the hands of the driver. (Fig. 184.)

The whole exercise is pasted to a 9x12-inch piece of manila drawing paper.

By stretching a piece of wall paper, figured side next to the board across the top of the blackboard, a most interesting circus parade may be mounted on it.

Bird Cage

Fold a piece of 9x12 inch construction paper as indicated by the dotted lines in Fig. 185. Fold double as shown in Fig. 186, and cut as shown in Fig. 187. Unfold and Fig. 188 is the result. Cut, free-

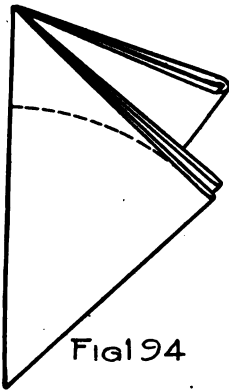


Fig 194

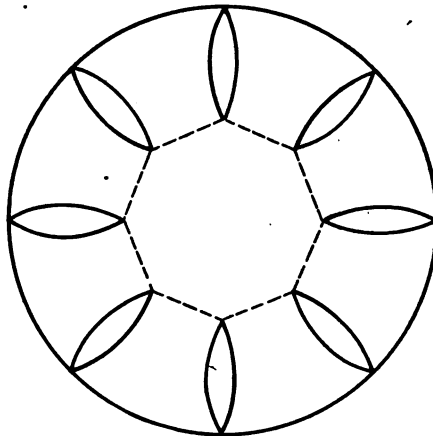


Fig 196

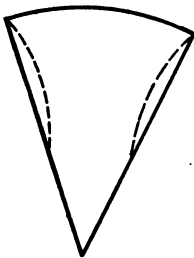


Fig 195

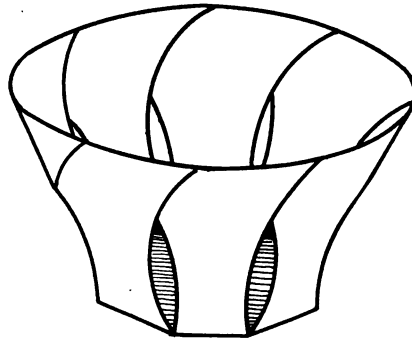


Fig 197

hand, a bird. Paste the bird on to the window pane and then the cut cage over the bird. Fig. 189 is the result.

Berry Basket or Box

This is the season for the early small fruits, so the pupils naturally are interested in the berry basket or box.

Fig. 190 shows the drawing for the box.

For the children the box may be made of a 5, 6, 7, or 8-inch square, folded into sixteen small squares and cut as shown by the continuous lines in Fig. 190. Fig. 191 shows the box cut and sides turned upward.

Fig. 192 shows the band for encircling the top. It is folded lengthwise through the center, one-half placed on the inside of the basket and one-half on the outside around the top edge. A single strip cut freehand may be used instead of the double strip. Fig. 193 shows the completed basket.

Another Berry Basket

Have the pupils fold an eight-inch square first into halves, then quarters, and finally into eights by folding the diagonal as shown in Fig. 194. Cut a circle by following the dotted lines. (Fig. 194.)

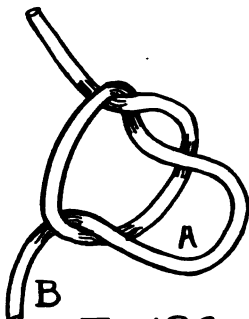


Fig 198

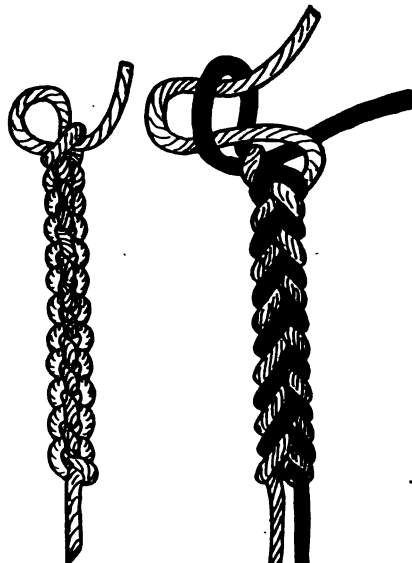


Fig 199

Fig 200

Cut along the dotted curved lines at each side as shown in Fig. 195. Unfold and Fig. 196 is the result. Turn each division upward, leaving a circular bottom with a diameter of two or three inches. Allow the different parts to overlap and paste. (Fig. 197.) A strip may be cut about one inch wide and long enough to reach around the top of the basket. Fold the strip into halves lengthwise. Paste the strip around the top the same as was suggested for the square box.

Reins

This is the season of the year when girls as well as boys are interested in all outdoor games, especially in playing horse. This interest creates a real need for something that may be used for reins in playing horse. The chain-stitch or finger crocheting, as it is often called, finds a place at this time. Make the reins of macrame. Begin by making a circle at one end of the cord as shown in Fig. 198. The fingers pass through the loop shown at A, catch the cord at B, and draw the cord double through the loop A. The part drawn through forms another loop through which the fingers again pass and a second loop is drawn through. Continue until a piece long enough for reins is made. Fig. 199.

Fig. 200 shows a chain-stitch of two cords using two colors. First one string is pulled through the loop and then the other.

Materials for May and June:

Cutting and Tearing—So far as possible use scraps.

Badges—1 pkg. red 6x9-inch construction paper.

1 pkg. blue 6x9-inch construction paper.

1 pkg. white 6x9-inch construction paper.

Flower Pot and Plant—1 pkg. 6x9-inch construction paper.

Scraps of paper, bright colors.

Circus Parade—3 pkgs. 9x12-inch construction paper, different colors.

Scraps for the animals.

Bird Cage—1 pkg. 9x12-inch construction paper.

Berry Box—1 pkg. 9x12-inch construction paper.

Berry Basket—1 pkg. 9x12-inch construction paper.

Reins—Three balls of macrame cord.



Construction Work
for the
Second Grade



SEPTEMBER

It must be remembered that the Beginning Second Grade is simply a short step beyond the Advanced First Grade. For this reason the beginning second grade work should be very little more difficult than that of the first grade. The pupils have been away for a long vacation, and have seemingly forgotten much of the work done during the previous year. It will, therefore, be necessary to begin with simple exercises. In the first grade, only the inch division of the ruler is used. It might be well to continue in the inch divisions for the month of September for the second grade. Even a combination of folding and measuring for the first two or three exercises might be profitably used.

Cutting and Tearing

Freehand and imaginative.

One-piece cutting.

Purpose:

To train the mind, hand, and eye to work together.

To teach originality and the power to create.

Material:

Number paper, tinted construction manila drawing, and kraft paper. When language or drawing paper has been used only on one side, it may again be used in the cutting and tearing.

Presentation:

At the beginning of the year the cuttings should be free-hand, and from memory or imagination. The cuttings should be done in one piece, thus avoiding the assembling of parts in the early part of the year. The pupils, after a long vacation, are full of ideas growing out of their holiday experiences. As in the first grade, all cuttings should be preserved. A cutting book will be constructed some time during the month of October, into which each child's best cuttings will be mounted.

Cutting Envelope

Purpose:

To provide a way of caring for cuttings until mounted in cutting book.

To provide for easy measuring.

Material:

50 sheets of 12x18-inch manila drawing paper or tinted construction paper.

50 sheets of 6x9-inch manila drawing paper or tinted construction paper.

Presentation:

As in the first grade, the pupils themselves can appreciate the value of the cutting envelope because of the necessity which has been created for it through caring for the freehand cuttings.

Allow the pupils to suggest various ways the envelope might be constructed. One whole lesson can be very profitably spent in planning with the class.

Construction of Envelopes

Place the paper on the desk so the 12-inch edge is parallel with the front edge of the desk. On the long edge, and two inches from the front corners, place dots. Connect these dots by a straight line. Fig. 1. Fold the opposite 12-inch edge to meet the line just drawn, and crease well. Fig. 2. Fold the two-inch strip so it closes what will be the opening in the envelope. Fig. 3.

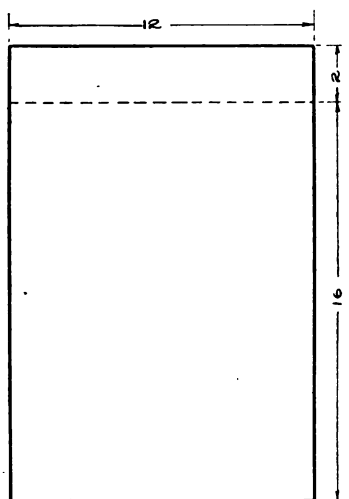


Fig. 1

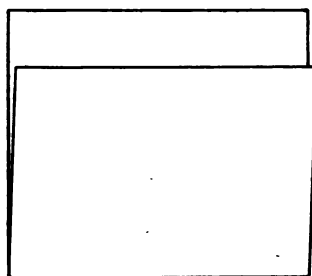


Fig. 2

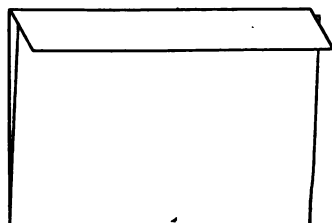


Fig. 3

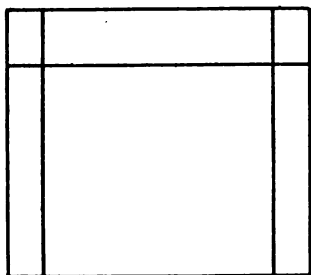


Fig. 4

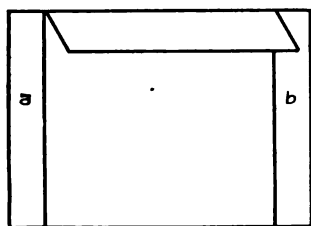


Fig. 5

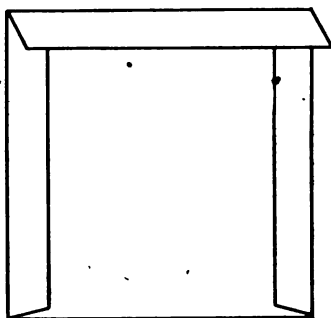


Fig. 6

Place the envelope so the closed edge is parallel with the front edge of the desk. Place the ruler along the right open side of the envelope so one long edge of the ruler coincides with the edges of the paper. With a pencil draw a line along the opposite edge of the ruler. The line just drawn is as far from the edge of the paper as the ruler is wide. Fig. 4. Cut on this line, cutting only one thickness of the paper. Cut on the crease above and below and two rectangular pieces of paper fall away. Fig. 5. Repeat for the opposite side. Paste the extended pieces "a" and "b" on to the envelope, thus closing the sides. Fig. 6. Fig. 7 shows an envelope decorated by using Waldcraft sticks and dyes. The decoration may be carried out in paper.

Waldcraft Sticks:

The Waldcraft sticks and the Waldcraft pads may be obtained from regular school supply houses. These pads are saturated with color. The sticks are used very much as a rubber stamp is used. The stick to be used is pressed down on the saturated pad and then pressed on the paper, as shown in Fig. 7.

Purpose:

Box

To be used for number cards up to ten. Fig. 8.

To continue the concrete construction work of first grade.

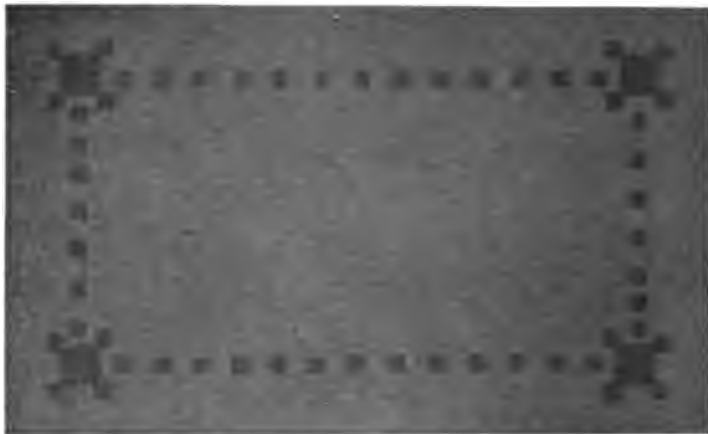


Fig. 7 Finished Envelope with Block Printing.

Material:

One hundred 9x12-inch pieces of manila drawing or tinted construction paper.

Each child has already had the set of number cards up to ten. The cards have been cut apart as directed. In his own mind a necessity for the box has already been created. Plan with the class the construction of a desirable box to hold the cards. This exercise may be a combination of measuring and cutting.

Put such questions as the following to the class:

How long must the box be to hold the blank card with the number 10 at the top? How wide?

If the box is just as long and as wide as the card, will it be large enough? Why?

How much larger do you think it should be?

How deep would you like your box?

What color would you like? Why?

Construction of Box

It will require two 9x12-inch pieces of manila or tinted construction paper to construct the box above mentioned. From the material furnished, cut two eight-inch squares, one to be used for the box and the other for the cover. From the square used for the box cut freehand a strip about one-eighth inch wide from two edges. This still leaves a square. From this square fold the box.

From the eight-inch square fold the cover. This difference in size makes it possible to easily remove the cover.

<u>2</u>	<u>6</u>	<u>8</u>	<u>10</u>
<u>1 + 1</u>	—	—	—
<u>3</u>	—	—	—
	<u>3 + 3</u>	—	—
<u>2 + 1</u>	<u>4 + 2</u>	<u>4 + 4</u>	
<u>4</u>	<u>5 + 1</u>	<u>5 + 3</u>	<u>5 + 5</u>
—	<u>7</u>	<u>6 + 2</u>	<u>6 + 4</u>
	—	<u>7 + 1</u>	<u>7 + 3</u>
<u>2 + 2</u>	—	<u>9</u>	<u>8 + 2</u>
<u>3 + 1</u>		—	<u>9 + 1</u>
<u>5</u>	<u>3 + 4</u>	—	
—	<u>6 + 1</u>	—	
	<u>5 + 2</u>	—	
<u>3 + 2</u>	<u>8 + 1</u>	<u>6 + 3</u>	
<u>4 + 1</u>	<u>5 + 4</u>	<u>7 + 2</u>	

Fig. 8 Number Card—Addition.

Fold the squares into sixteen small squares, as in the first grade box construction, reviewing the number as the construction proceeds.

Cut away one row of squares. Cut and fold the remaining three rows into box form, making the sides and ends double. For detail in construction, see first grade work.

To strengthen the box, paste down sides and ends. From the middle of each side of the cover, cut a small triangle. By so doing the box may be held while the cover is being removed.

How to Use the Number Cards

(Cut on all continuous solid lines.) Fig. 8.

The blank cards on which the short, solid lines are drawn, are placed on the desk, ranging in their order from two to ten in-

clusive. The various combinations are picked up, one at a time, and placed on the blank cards.

The short lines indicate the number of combination to be placed on each blank card.

Do not allow a pupil to get into the habit of looking for some one particular combination, but have him understand that each time he picks there is a place for what he picks and that it should be placed whether a combination of two, eight, ten or any other combination.

Care of Seat Work

Each box should be numbered. Each piece of seat work should have the corresponding number on it. This makes it easily cared for. If a piece falls on the floor, and has been numbered the same as the box, it is easily placed in its proper place.

f	old	r	ight	ch	eat	f	an	h	ad	b	and	c	ap	n	ame	d	en
c	old	l	ight	b	eat	r	an	b	ad	h	and	l	ap	c	ame	h	en
b	old	f	ight	m	eat	p	an	l	ad	s	and	n	ap	l	ame	m	en
t	old	t	ight	s	eat	t	an	m	ad	l	and	r	ap	t	ame	p	en
s	old	n	ight	h	eat	m	an	p	ad	st	and	s	ap	s	ame	t	en

Fig. 9 Phonograms.

If the teacher will construct of strawboard, or any heavy paper, a number of shallow trays, they may be used to hold the various lines of seat work, thus taking it out of the pupils' desks. At any time a certain line of seat work is to be used, the tray may be passed and each child provided with a box. If this is done for each line of seat work, it will be kept in good condition and always in readiness.

Envelope

This is to be a small envelope, to be used for phonograms as shown in Fig. 9.

Purpose:

To give the pupils an opportunity to construct an envelope from the experience gained in the construction of the cutting envelope.

Material:

A sheet of 6x9-inch tinted construction or manila drawing paper.

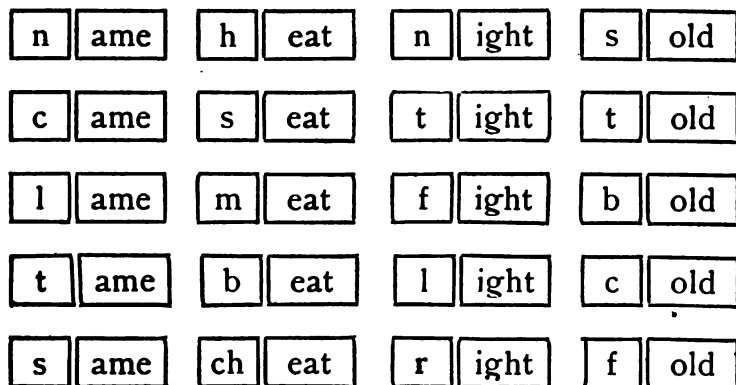


Fig. 9A Phonograms Cut and Placed.

Presentation:

As in previous exercises the pupils must know what the content of the envelope is to be. For this reason a card containing a complete list of words should be passed to each child. This exercise affords a very simple and interesting review of work done last year, and may be given to the pupils of the first grade after losing its value in the second grade.

With the 6x9-inch piece of paper on each child's desk, discuss with them the various ways of constructing envelopes to hold the seat work at hand.

The Sheet of Phonograms: Fig. 9

For seat work, first cut along the continuous lines separating the different words. Fig. 9. Cut again along the dotted lines separating the initial letter from the ending. The parts are all placed in the envelope. During a period for seat work, the pupils arrange the words in families by first placing the ending and then finding the initial letter for each ending, and placing as shown in Fig. 9A.

Construction of Envelope:

The envelope for phonograms is constructed the same as the cutting envelope, only on a smaller scale.

Pupils should do this without direction from the teacher.

Box

Purpose:

- To make a box to hold colored sticks.
- To teach neatness and accuracy.
- To make possible practical number work.

Material:

50 sheets 9x12-inch tinted construction paper.

Library paste.

Tools:

Ruler, scissors, lead pencil.

Presentation:

It is taken for granted that the pupils have used the colored sticks in some previous lesson. They have experienced the inconvenience of passing and collecting materials. In short, a real necessity has been created for the construction of a receptacle to hold the sticks. In this case, it is to be a box.

The size and shape of any box must be determined by its use. Since this box is to be used for sticks, and the longest stick is but five inches in length, it would not be necessary to make a box seven or eight inches long. Put before the pupils the question of length, and have them decide what the length should be. Five and a half or six inches in length will allow sufficient room to remove the sticks with ease.

Having decided upon the length, the width should be considered. The pupils will find from experience with the sticks on the desk that a box two inches wide will be quite wide enough. Have the pupils draw a line 6 inches long. Draw a line 2 inches long.

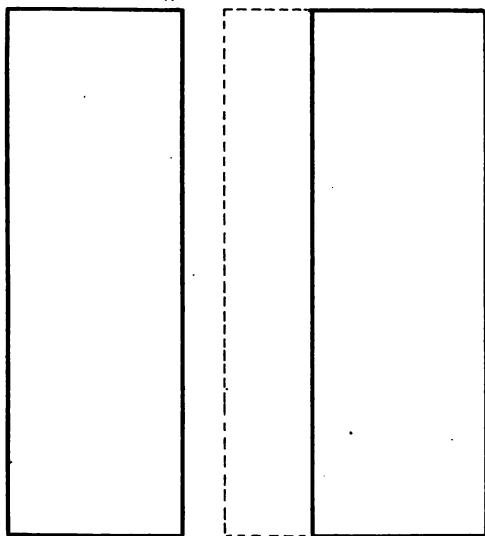


Fig 10

Fig 11

It is not at all expected that the pupils will all give the above dimensions. It is only questioning on the part of the teacher that will lead them to see that any length less than $5\frac{1}{2}$ or 6 inches would be too short, and any width less than $1\frac{1}{2}$ inches would be too narrow.

The next dimension to be considered is the depth. This, again, the pupils may easily determine from their experience with the sticks on their desks. After a certain amount of discussion, it may be decided that $\frac{1}{2}$ or $\frac{3}{4}$ inch would be quite deep enough.

Have the pupils draw a line $\frac{1}{2}$ inch in length. Since the second-grade pupils work only in inches and half inches, it might be well to decide definitely that the box is to be one-half inch deep.

There is no doubt but the pupils who are to construct the above box have constructed boxes in the first grade. If so, they are familiar with the fact that in order to make the box substantial, the sides and ends should be double.

The question then is: How large must the paper be in order to have a box that, when finished, shall be six inches long, two inches wide and one-half inch deep, the sides and ends being double?

In determining this, the teacher may draw upon the blackboard a rectangle 6 inches long and 2 inches wide. See Fig. 10.

How much must be added to one side in order that the box may be $\frac{1}{2}$ inch deep? See Fig. 11. The sides to be double.

How much must be added to the other side in order that the box may be $\frac{1}{2}$ inch deep and double? Fig. 12.

How wide must the paper be in order to make the box? (2 inches plus 1 plus 1 equals 4 inches.) See Fig. 12.

How much must be added to one end in order that the box may be $\frac{1}{2}$ inch deep and the end double? See Fig. 13.

How much added to the other end? Fig. 14. (6 inches plus 1 plus 1 equals 8 inches.)

In the above way the class determines the dimensions of the piece of paper necessary to make the desired box. The rectangle drawn is 8 inches long and 4 inches wide.

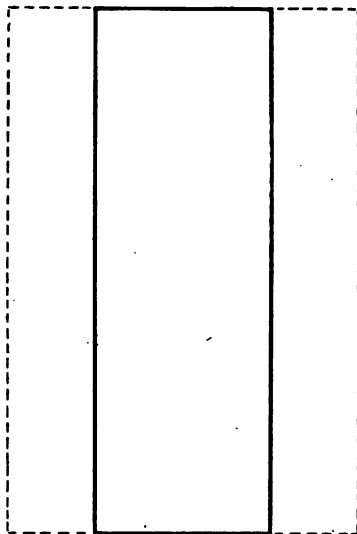


Fig 12

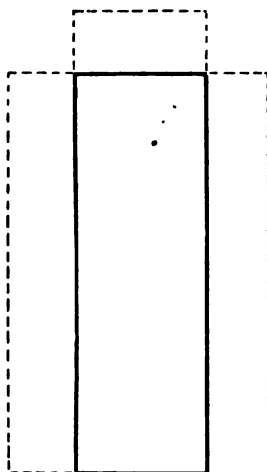


Fig 13

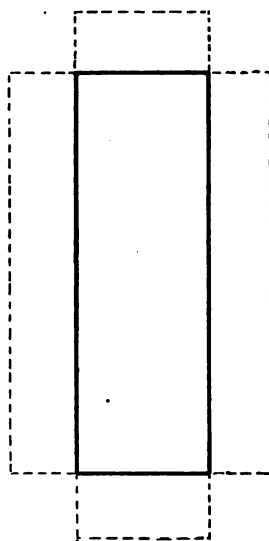


Fig 14

Many practical questions, similar to the following, may be asked of the pupils:

Draw a line equal in length to one short edge and one long edge of the rectangle. How much longer is the rectangle than it is wide? What is the distance around the rectangle (perimeter)?

What is the length of the two short edges put together?

The width is what part of the length?

The length is how many times the width?

Formal Number Lesson.

The following formal number lesson is developed in the above construction:

8 inches + 4 inches.

8 inches — 4 inches.

8 inches + 4 inches + 8 inches + 4 inches.

12 inches + 12 inches.

4 inches + 4 inches.

4 inches is what part of 8 inches?

8 inches ÷ 4 inches.

8 inches + 8 inches.

The class is now ready to continue the construction of the box.

After cutting the rectangle 8x4 inches for the cover, cut another rectangle 8x4 inches and from it cut a narrow strip about $\frac{1}{4}$ inch

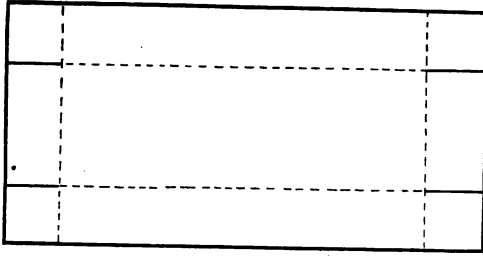


FIG 15

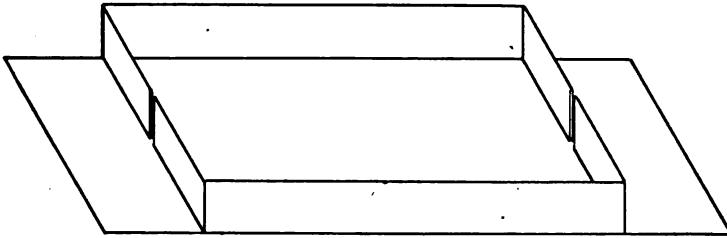


FIG 16

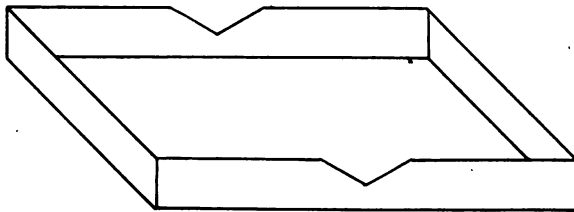


FIG 17

wide from one long edge and another such strip from one short edge. This will make the box, when finished, a trifle smaller than the cover.

To make a pattern drawing of the box, place dots on the right and left edges one inch from the corners, and connect corresponding dots by straight lines. Place dots on the front and back edges one inch from the corners, and connect corresponding dots. Fig. 15.

It will be remembered that all dotted lines are creased and all continuous lines are cut.

In order to secure the double ends and sides, fold the outer edges into dotted lines. Slip the ends one within the other, and fold rectangle at each end over the end inside of box. Fig. 16.

The Cover

To make the cover, proceed with the box construction. To aid in removing the cover, a small triangle may be cut from each side, thus making it possible to hold the box while the cover is being removed. Fig. 17.

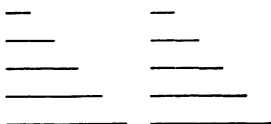
The box is strengthened by the use of library paste, but it will remain nicely folded without the paste.

If, for any reason, the work outlined for September is not completed during the month, it should be carried over into October and finished before beginning the October work.

Suggestions for the Use of Sticks

1. With sticks of different lengths, sort as to length, putting all the 1-inch sticks in one pile, the 2-inch sticks in another, etc.

2. Arrange sticks according to length,—



3. Make combinations with sticks of different lengths. Lay a 5-inch stick; under it lay a 1-inch and a 4-inch stick; then a 2-inch and a 3-inch stick.

4. With the help of a ruler, lay a stick 6 inches long, using any number of smaller sticks. The child finds that he may use the following:

4 inches ——— 2 inches ———

5 inches ——— 1 inch ———

3 inches ——— 3 inches ———

1 inch— 1 inch— 1 inch— 1 inch— 1 inch— 1 inch—

Lay combinations for 4-inch and 3-inch sticks.

5. Use sticks of different lengths to lay squares, putting the 1-inch square in the center, and the 2-inch, 3-inch, 4-inch and 5-inch squares outside of that.

7. Build the sides of a log house. Use sticks of the same length, three or four inches long. Lay two sticks on the desk, parallel to each other, and not quite the length of the sticks apart. Lay two others across these two. Lay two across the second pair. Use as many sticks as you wish. Toothpicks may be used in the same way.

8. Use 6 sticks, each 3 inches or 4 inches long, to lay a star. Lay a triangle and with the other three sticks lay another triangle on top of the first one.

9. A five-pointed star may be made with pegs or 1-inch sticks. Use five sticks to lay a pentagon.

On each side of the pentagon, with two other sticks, build a triangle.

10. Use sticks to lay rectangles of different sizes. Lay a rectangle 5 inches long and 3 inches wide. This may be done by using sticks of various lengths.

Material for September:

Cutting Envelope—1 package 12x18-inch construction paper.

Box for Number Cards—2 packages 9x12-inch construction paper.

Envelope for Phonograms—1 package 6x9-inch construction paper.

Box for Colored Sticks—1 package 9x12-inch construction paper.

Colored Sticks—250 each of 1, 2, 3, 4, 5 and 6-inch.

1 package of Phonograms. Fig. 9.

OCTOBER

Cutting and Tearing

Freehand, covering the imaginative and memory cuttings.

Relate the cutting to the history, literature, civics and special holidays. Most of the cutting in the first grade is in one piece. In the second grade, parts of simple illustrations may be cut and assembled. For example, if, in the illustration there is to be a house, a tree, and a man, each may be cut separately, arranged and pasted. This gives opportunity for freedom which the drawing does not, as it is possible for the pupil to change the arrangement until it is what he desires, before making it permanently by pasting. Cut cats, witches, pumpkins, etc., for Hallowe'en decorations.

Purpose:

To give freedom and originality.

To train the hand, eye, and brain.

To give an opportunity to use cutting as a mode of expression.

The Half Inch

Some time should be spent in developing the half inch. During the month of September, the work was confined to the inch. Use rulers marked off in inches and half inches.

Permit the pupils to measure objects in the room.

Pass to each pupil a 6x9-inch piece of paper, allowing him to measure off the entire piece into half-inch squares. This may be done by placing dots one-half inch apart along the long edge and then connecting corresponding dots. Treat the short edges in a similar way. Cut along the lines, using the small squares to arrange in borders.

Cutting Book

Purpose:

To provide a place for the pupil's best cuttings.

To give experience in simple book making.

Material:

3 pkgs. (100 sheets) of 6x9-inch gray manila drawing paper.

1 ball of macrame cord.

1 pkg. of 6x9-inch tinted construction paper.

Presentation:

The pupil's cutting envelope is the first step toward the construction of the cutting book. His desire to care for his best cut-

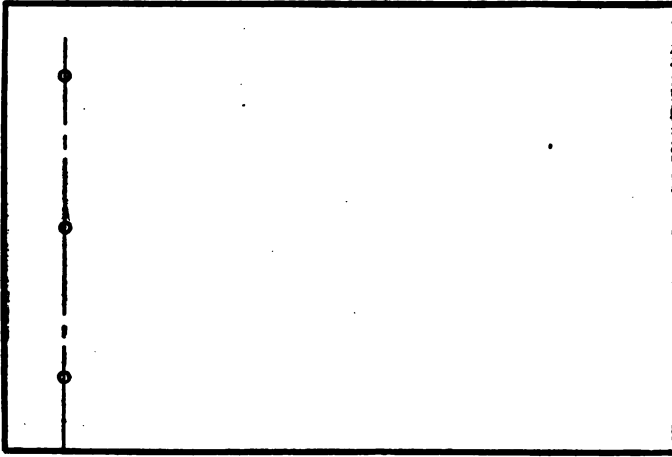


Fig 18

tings will lead to interest in putting forth his best efforts in the construction of the book.

Construction of Book:

Pass to each child six pieces of paper 6x9 inches. To give practice in half-inch measuring, draw a line on each sheet $\frac{1}{2}$ inch from one of the short edges. On each line place a dot at center and other dots two inches above and below the one just placed. These dots will mark the places the sheets should be punched. (Fig. 18.) The first page and the last page of the book make the cover, and should be of another color than the other pages.



Fig. 18A Mounted Cutting Book.

To Tie the Pages:

Allow the macrame cord to pass through the center hole of each sheet. Bring one end of the cord through the hole below the center. Bring the same end through the hole above the center, back and through the center hole. Both ends are now through the center hole, one at one side of the long stitch and the other at the other side. With the two ends tie a hard knot. The book is now ready to receive cuttings. Fig. 18A shows the finished book.

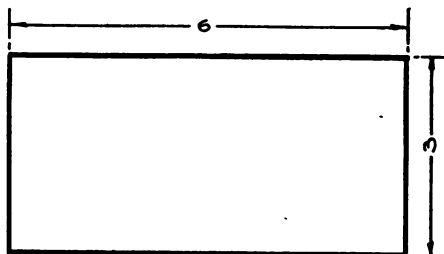


FIG19

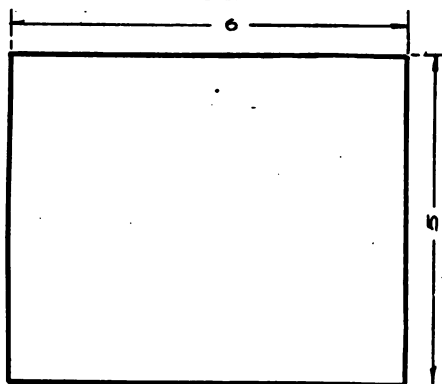


FIG20

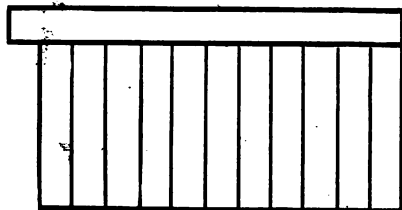


FIG21

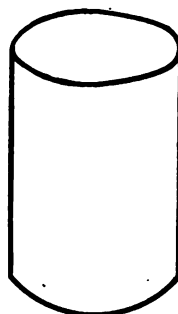


FIG22



FIG23

Lantern

Construct small lanterns of different colors and sizes.

Purpose:

To be used in schoolroom decorations for Hallowe'en.

To give the pupils an opportunity to construct rectangles.

To give a practical lesson in perimeter and circumference.

Material:

1 rectangle 6x3 inches. 1 rectangle 6x5 inches.

These rectangles may be made of one pack of 6x9-inch construction paper. Library paste.

Tools:

Scissors and ruler.

Presentation:

Show the pupils a completed lantern. They are always interested in schoolroom decoration—so much so that the enthusiasm and interest need not be created, because they are already there.

Pass to each pupil a piece of 6x9-inch tinted construction paper. He is to measure and cut from this piece two rectangles, one 6x3 inches (Fig. 19), and the other 6x5 inches (Fig. 20).

Place the dimensions of the above on the blackboard, and permit the pupils to begin work without any further direction. Impress upon the pupils to use the materials as economically as possible.

After the rectangles are drawn, ask the class a few questions similar to the following:

What is the length of the two short edges put together?

What is the length of the two long edges put together?

Draw a line equal in length to one long edge and one short edge put together.

How many inches half way around the rectangle?

How many inches around the rectangle? (Introduce perimeter.)

Allow the short edges of the 6x3-inch rectangles to overlap one-half inch and paste. (Fig. 22.)

In the 6x5-inch rectangle, draw lines one-half inch from long edges and parallel to same.

Fold long edges together and draw lines $\frac{1}{2}$ inch apart from the closed edge to the line above. (Fig. 21.) While the paper is folded, cut along the continuous lines just drawn.

Cut away the last strip, as shown in Fig. 21. If narrower strips are desired, cut each strip in center, freehand, making them $\frac{1}{4}$ inch wide.

Unfold, and paste the slashed rectangle around the cylinder. (Fig. 22.) This completes the lantern. (Fig. 23.) Add a string or paper hanger.



FIG24

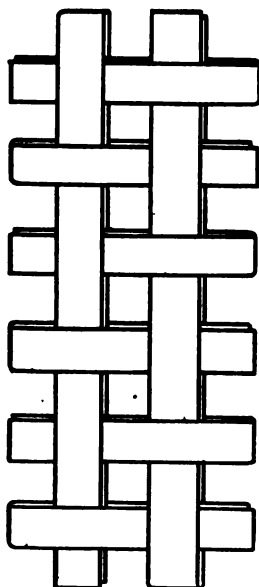


FIG25

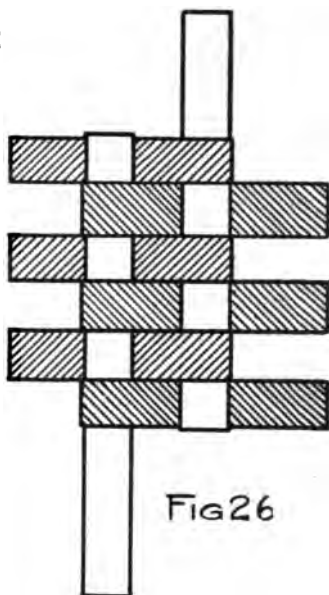


FIG26

By this time a quantity of small pieces of tinted paper has accumulated. Pass this around to the pupils, allowing them to construct other lanterns.

Double Weaving—Book Mark

Purpose:

- To give the child an experience in simple double weaving.
- To train the hand, eye and brain to work in unison.
- To give the child the power to work out what he wishes to use in his play.
- To prepare for the more advanced basketry in the upper grades.

Material:

- 100 strips 12 inches long and $\frac{1}{2}$ inch wide.
- 300 strips 6 inches long and $\frac{1}{2}$ inch wide.

Presentation:

Show the pupils a completed book mark. Begin the book mark by using two contrasting shades of bogus bristol board. Cut two strips 12 inches long and $\frac{1}{2}$ inch wide from one shade. Fold the ends of each strip together. Cut six strips, each 6 inches long and $\frac{1}{2}$ inch wide from the other shade. Fold the ends together.

Arrange the two long strips in a vertical position, the one on the

left having its folded edge toward you, and the second one its two ends toward you. (Fig. 24.) Begin weaving with the short strips, an inch from the back left corner. (Fig. 25.)

Open the ends of the weaver and pass one above and one below the two parts of the first vertical strip. Close the ends of the weaver and pass them between the two parts of the second vertical strip. (Fig. 25.)

Begin with the second weaver at the right edge. Open the ends of the weaver and pass one above and one below the two parts of the first vertical strip. Close the ends of the weaver and pass them between the two parts of the second vertical strip.

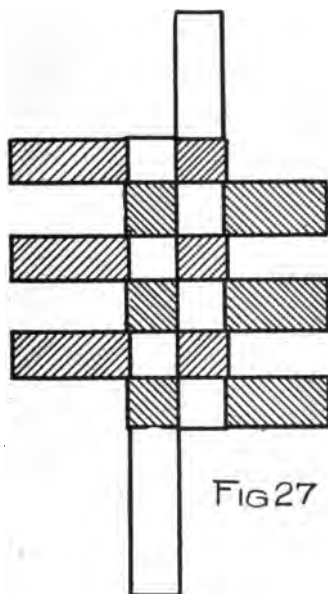


FIG 27

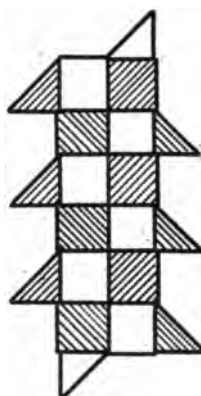


FIG 28

Continue weaving in this manner, first from the left side, then from the right side, until the six weavers have been used. By pulling the open ends of the vertical strips, the weavers are pressed together as shown in Fig. 26. By pulling the open ends of the weavers, the vertical strips are pressed together. (Fig. 27.)

Fig. 28 shows the finished book mark.

Circular Basket

Purpose:

To be used in Hallowe'en party.

May be useful for a button box in the home.

Leads to skill in the manipulation of material.

Material:

200 strips 24 inches by $\frac{1}{2}$ inch of one color.

400 strips 12 inches by $\frac{1}{2}$ inch of contrasting color.

100 four-inch squares of bristol board.

Construction of Basket:

When more than two vertical strips are used, as in the circular basket (Fig. 31), arrange the four long strips in a vertical position, the first one on the left having its *folded edge* toward you, the second one having its two *ends* toward you, the third one having its *folded edge* toward you, and the fourth one having its two *ends* toward you. Fig. 29 shows the weaving of the circular basket.

After the weaving is completed, cut the vertical and horizontal strips pointed, as shown in Fig. 30.

Form the basket by bringing the ends of the vertical strips cut pointed, together. Pass each end under the first weaver on the opposite edge. This makes a secure fastening.

Form the bottom of the basket by folding inward the ends of

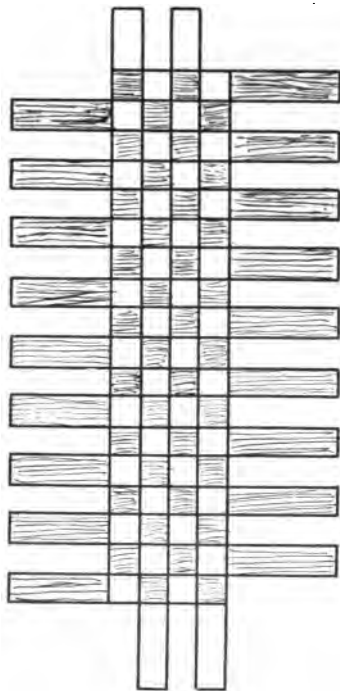


FIG 29

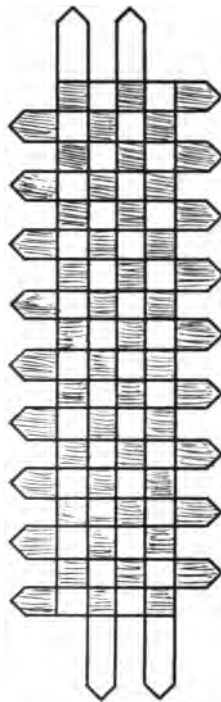


FIG 30

the weavers. Cut two circular pieces of paper of the desired size; paste one circle on the inside and the other on the outside. Fold the points outward around the top. Fig. 31 shows the finished basket.

The forming of the basket is not a difficult process, as the strips are woven across on the outside.

Material for October:

Finished Cutting Book, Fig. 18A.

Cutting Book { 3 pkgs. 6x9-inch gray drawing paper.
1 pkg. 6x9-inch tinted construction paper.
1 ball macrame cord.

Lanterns—1 pkg. 6x9-inch tinted construction paper.

Double Weaving—

Book Mark { 1 pkg. of 100 blue bristol board strips.
1 pkg. of 100 primrose bristol board strips.

Circular Basket { 2 pkgs. bristol board strips of one color.
4 pkgs. bristol board strips of contrasting colors.
2 sheets bristol board.

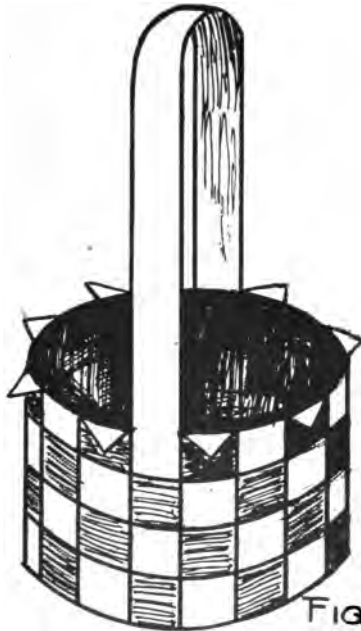


FIG 31

NOVEMBER

Free-Hand Cutting

No month of the year is richer in opportunity for cutting and tearing than the month of November.

Choose some particular part of the history for this month and have the children illustrate, through cuttings, the happenings of the time. Holland is a good subject, as it affords great variety.

A strip of wrapping paper or ingrain wall paper may be placed across the entire front blackboard. This may be used for the cut-

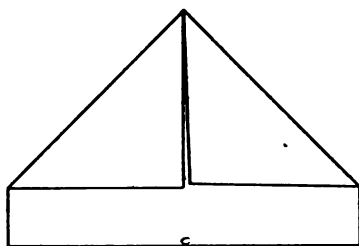


FIG 32

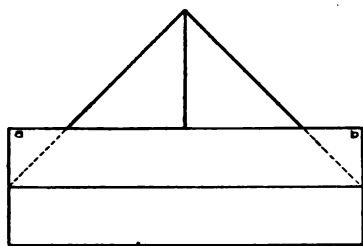


FIG 33

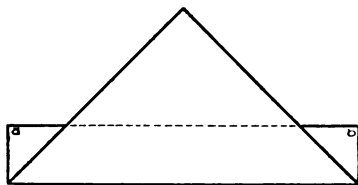


FIG 34

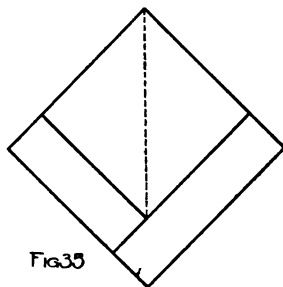


FIG 35

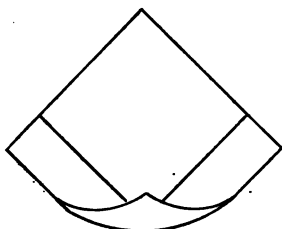


FIG 36

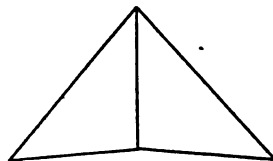


FIG 37



Fig. 38 Cap and Kerchief.

tings, as they may be arranged and pasted on it. The fact that it is large will prompt a freedom in cuttings. Cut Dutch homes, windmills, cows, boats, etc., and arrange to make a Dutch scene.

If the teacher so chooses, the paper is long enough to let one end represent the American shore and the other the English, with the ocean between. Cuttings pertaining to England may be pasted to one end, and those pertaining to America to the other end. The Mayflower may be cut and placed in the ocean.

Puritan Cap for Girls; Soldier Cap for Boys

Purpose:

To interest the pupils in the early mode of dressing.

To make real the history of the Colonial days.

Material:

One piece of paper 9x12 inches. This may be a piece of newspaper. To make full-sized cap use a piece of paper 18x20 inches.

Construction of Cap:

Hold the paper with short edges at right and left. Fold right and left edges together. Hold paper with creased edge at top. Fold right and left edges together. Unfold. Find crease thus formed.

Fold right half of upper edge to this crease; left half. Fig. 32. Fold front oblong at bottom upward along front edge of triangle; back oblong upward along back edge of triangle. Fig. 33. Fold corners at "a" down, one over the other, at "b." Fig. 34.

Hold paper by middle points of lower edges. Pull until square is formed. Fig. 35. The folding at this point makes a fine cap for the girls, as in Fig. 36.

To finish the soldier cap for the boys, fold lower corners upward and outward to upper corner. Spread at the bottom to fit the head. Fig. 37.

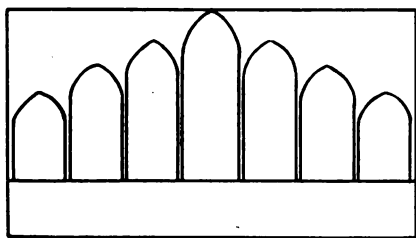


FIG 39

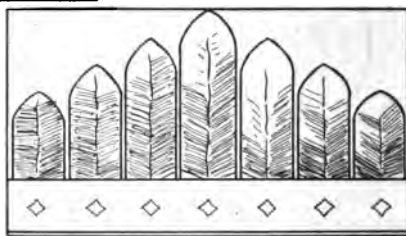


FIG 40

Kerchief

A very interesting kerchief may be made for the girls by folding three-cornered a plain white paper napkin. For the boys, cut a round collar out of the napkin. Fig. 38.

Indian Head-dress

To make the Indian head-dress, fold and cut a piece of 12x18-inch construction paper as shown in Fig. 39. Color the feathers with colored crayons as shown in Fig. 40.

Basket—(Thanksgiving)

Purpose:

To give the pupils pleasure.

To create a desire to do for others.

Material:

Tinted construction paper.

Presentation:

It is usually customary for the pupils, on special days, to celebrate by having a program, or some little affair that might suggest a party. On this occasion, have the pupils of the second grade make and give to the pupils of the first grade, little baskets in which popcorn or candy may be passed.

Construction of Basket:

Show to the class a completed basket. Have the pupils suggest various uses for the basket. Place on the blackboard a pattern drawing as shown in Fig. 41.

Pass paper and have them construct by reading pattern drawing.

If all lines to be folded in any exercise are first lightly scored and then folded, the results are more finished.

Cut handle about $\frac{3}{4}$ of an inch wide and 7 inches long. Since the pupils measure only in half inches, cut the handle 7 inches long and $\frac{1}{2}$ inch wide. A narrow strip may now be cut from the handle freehand, thus reducing the width to $\frac{3}{8}$ of an inch. Fig. 42 shows the finished basket.

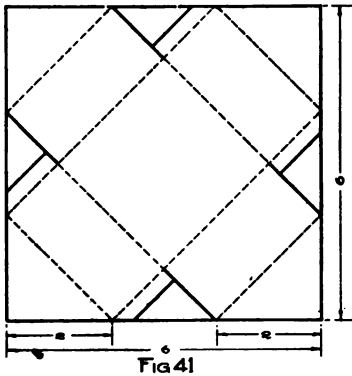


Fig. 41

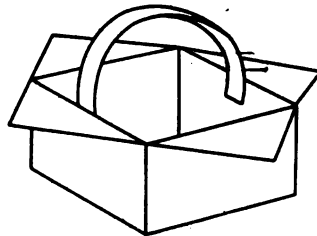


Fig. 42

Original Basket

Pass the necessary material to the class and have a basket constructed according to each one's own ideas.

Spelling Blank**Purpose:**

To aid the child in keeping systematically the words learned for the month.

To give the child an appreciation of his own power in constructing the simple blank books.

To lead to more difficult work as he advances.

Material:

Five $5\frac{1}{2}$ or 6-inch squares of number paper or unruled language paper.

One 6-inch square of tinted construction paper.

One piece of carpet warp of desirable color, 14 to 16 inches long.

One darning needle. (Needles may be borrowed of third grade.)

Presentation:

Children enjoy the elementary book-making, especially when the teacher is enthusiastic. They see the reasons for the book construction. The parents can see a reason for it.

Pass to each child five squares of unruled language paper and one square of tinted construction paper. Fold each sheet into halves. Place them one within the other, placing all the white sheets into the colored cover.

To Sew the Book:

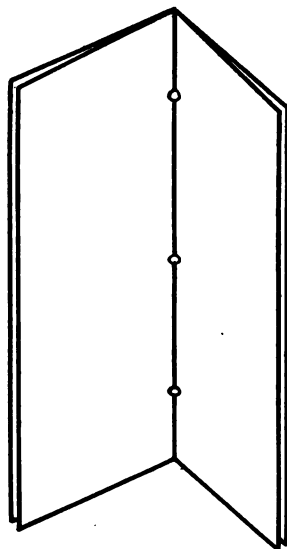


FIG. 43

First mark the center of the crease down the back by a dot. Fig. 43. Two inches above and below this dot place other dots. Thrust the needle through the entire book at the places the dots appear. With the needle threaded, bring it through the center hole from the outside, leaving an end of about four inches. Bring the needle through the bottom hole from inside to the outside. Next, with one long stitch, bring the needle through the hole above the center to the inside of the book. The needle next passes through the center hole a second time, but this time it is from the inside to the outside. There are now two ends at the outside of the book, one at each side of the long stitch. Tie a hard knot over the long stitch. The ends may now be tied into a bow knot.

Plan very carefully some simple decoration for the cover. Cuttings or the stick printing may be used.

Number Game

Purpose:

To give the pupils practical experience in a construction of practical value; and to give them opportunity to use the half inch.

To provide a simple means of getting simple abstract number.

Material:

One piece of 12x12-inch manila document paper.

One piece of 6x12-inch tinted construction paper.

One strip of bookbinder's cloth 1x12 inches (to be cut at the school). Library paste.

Presentation:

Present to the class a finished board. A general talk explaining its use will add greatly to the constructive interest.

Pass to each child a piece of tinted construction paper 6x12 inches. Place dots along the edges $1\frac{1}{2}$ inches apart. Connect corresponding dots by straight lines. Cut on the lines just drawn, dividing the sheet into $1\frac{1}{2}$ -inch squares. Place the squares in the cutting envelope until ready to paste them to the board.

Pass to each child a 12-inch square of manila document. Place dots $1\frac{1}{2}$ inch apart on each edge. Connect the corresponding dots by straight lines. Beginning in the upper left hand corner paste a colored square to every other square marked on the board. We then have the board as shown in Fig. 44. Figures as shown in Fig. 45 are placed in each blank square.

To make the board easily handled, it may be cut through the center and the two halves pasted together with a strip of bookbinder's cloth 1x12 inches. This acts as a hinge and the two halves may be folded like the covers of a book.

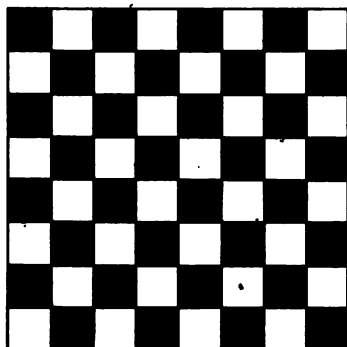


Fig 44

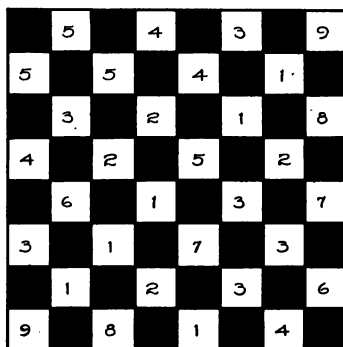


Fig 45

Cut a small disc about the size of a twenty-five-cent piece, and the board is ready for use. Fig. 45.

Use of Board:

Each child with his note book and pencil may make combinations by copying the figures in the squares touching diagonally. Forty-nine combinations can be made, giving repetition of many of the 25 combinations:

5	5	5	4	4	3	1	will be taken from
5	5	4	4	3	1	9	the first and second
—	—	—	—	—	—	—	rows. See Fig. 45.
10	10	9	8	7	4	10	

By using the disc a game may be played very much the same as a checker game. The disc is moved from one figure to another diagonally, making an example in addition with each move. For example, if a start is made by placing the disc on the five in the upper left hand corner of the board, and is moved to the next five, an example is the result which is written:

5

5

—

10.

Moving from the 5 to, the 3, we have 5

3

Moving from 3 to 4, we have 4

3

8

—

7

Any number of combinations may be had by moving diagonally first in one direction and then another. It is true that each pupil's set of examples is different from that of any other in the class. The game is to see how many examples each one can get during a period of seat work. The game is one in which each pupil may work to break his own record. If, during one period, he is able to get but 20 combinations, he will aim to get more the next period. He may also work to get the most of any other in the class.

The exercise is a valuable one if conducted as suggested above. Each teacher, no doubt, will discover other ways the board may be used.

Envelope

Purpose:

To provide a way of keeping the number board.

To give exercise in reading a pattern drawing from the black-board.

Material:

One piece of 15x20-inch kraft wrapping paper.

Library paste.

Construction of Envelope:

Before beginning the construction of the envelope, the teacher and the class should discuss the problem and the material to be used. Fig. 46.

How long must the envelope be? How wide?

Why is kraft paper better than drawing paper?

Why is it desirable to make the envelope of a dark colored paper?

Place the drawing shown in Fig. 46 on the blackboard and have the pupils work from it. Care should be taken to make the drawing large enough so that it may be seen from all parts of the room.

Material for November:

Puritan Cap for Girls or Soldier Cap for Boys—50 pieces of plain white paper 18x20 inches or pieces of newspaper.

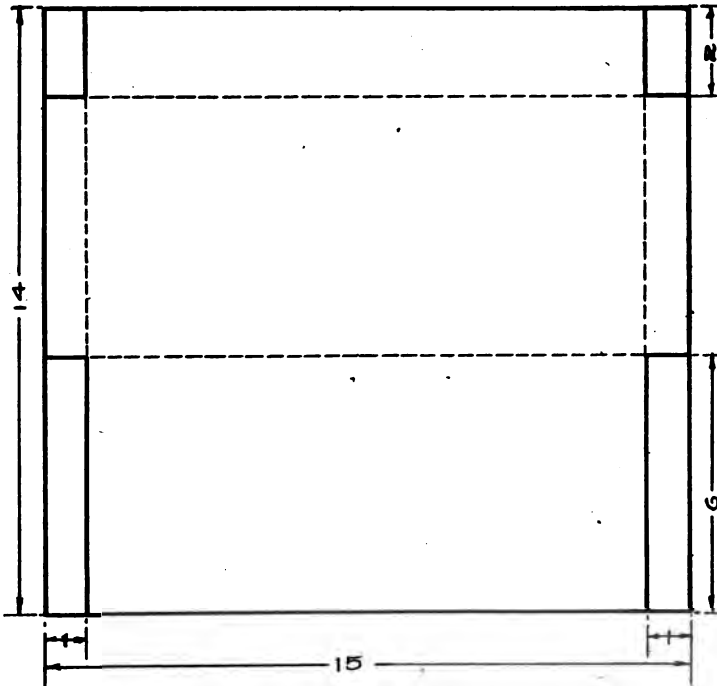


FIG 46

Kerchief for Girls, Collar for Boys—50 white paper napkins.

Indian Head-dress—1 pkg. 12x18-inch construction paper or manila drawing paper.

Basket (Thanksgiving)—1 pkg. 6x9-inch construction paper.

Spelling Blank { 3 pkgs. language or number paper.
1 pkg. 6x9-inch construction paper.
Carpet warp. Darning needles—50.

Number Game { 1 pkg. 12x12-inch manila document (100 pupils).
1 pkg. 9x12-inch tinted construction paper.
24 inches of bookbinder's cloth.

Envelope for Game Board—1 pkg. 15x20-inch kraft paper. (Enough for 100 pupils.)

DECEMBER

Cutting and Tearing

This month is rich in opportunities for cutting and tearing. Have pupils show, by cutting the gifts they expect to give to various members of the family and friends.

Have all unite in the making of one general Christmas poster for the room. Use paper for background as suggested for November.

Christmas Tree Decoration

Purpose:

To create a Christmas spirit.

To give pupils pleasure.

To do for others, encouraging the spirit of giving rather than receiving.

Material:

Construction paper—odds and ends left from various exercises.

Much of the first grade work may be duplicated. In many cases the exercise may be shown to the class, allowing them to proceed with the construction of same without direction from the teacher.

Christmas Basket

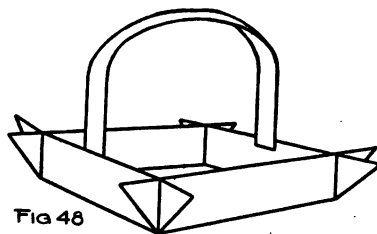
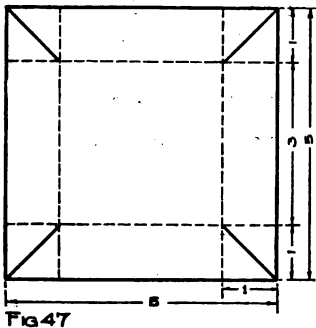
Material:

Tinted construction paper.

Candle wicking, macrame cord, carpet warp or jute to tie the corners.

Presentation:

Show the class a completed basket. Have pupils suggest various uses for same.



Place on the blackboard a pattern drawing as shown in Fig. 47, and have pupils read from the drawing directions for constructing the basket. Cut the handle 7 inches long and about $\frac{3}{8}$ of an inch wide. The width may be made $\frac{1}{2}$ inch, then cut, freehand, to about $\frac{3}{8}$ of an inch. Fig. 48 shows the finished basket.

Other Baskets

Pass to the pupils any scraps of paper that may have been left after other constructions, and have them make original baskets.

Calendar

Read what first grade outline suggests on calendars.

Children have always constructed calendars in school, and probably always will, as a calendar has a place in every home. For this reason it makes an excellent problem for the schoolroom.

The calendar gives opportunity for simple drawing or cutting.

Material for One Second Grade:

Two pkgs. 6x9-inch tinted construction paper. Each package to be of a different tint.

Calendar pads.

Presentation:

The construction of the calendar should mean more than just the assembling of parts. Fig. 49 shows the assembled parts, which were cut by using the following dimensions:

Largest rectangle, $6 \times 2\frac{1}{2}$ inches.

Medium rectangle, $5\frac{1}{2} \times 2$ inches.

Smallest rectangle, on which drawing appears, $1\frac{1}{2} \times 3\frac{1}{2}$ inches.

In pasting these various rectangles, apply the paste to only the upper edge of each rectangle.



FIG 49

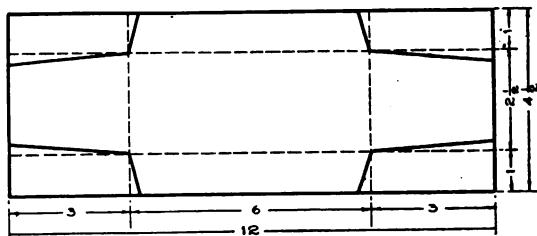


FIG 50

Before placing any of the rectangles, paste the loop (the hanger) at the top of the largest rectangle.

Envelope

Fig. 50 gives pattern drawing for calendar folder.

Pin Case

Purpose:

To make a practical gift for the mother.

To derive from a gift practical number and skill which shows in a neatly and well finished piece of work.

Material:

Two $4\frac{1}{2}$ -inch squares of construction paper.

Pins for the case.

One-half yard narrow ribbon, twine, candle wicking, macrame cord, jute, or carpet warp.

A darning needle.

A small all-over designed paper, or cover paper.

Presentation:

The pin case will find a place in every home. It, therefore, is a practical problem. Homes of rich and poor use pins.

Show the pupils a finished pin holder. (Fig. 53.) In this one the cube, as a foundation, will be recognized. This is a season of the year when all children are enthusiastic over making gifts. Discuss the problem.

What does the cube measure on each edge?

How would you begin to construct a cube for this purpose?

Let some pupil step to the board and make a freehand drawing of the pattern.

To Construct the Cubical Box:

Pass to each pupil a $4\frac{1}{2}$ -inch square of construction paper. Place dots on the edges $1\frac{1}{2}$ inch from each corner. Connect corresponding dots by straight lines. Cut on continuous lines as shown in Fig. 51.

Rule and cut a second square in the same way.

Without pasting, fold one square into cubical box. Allow the second square to fold around the first one; or, in other words, let one fit into the other, and paste. This makes the foundation.

To Cover the Cube:

The cube measures $1\frac{1}{2}$ inch on each face.

How long must a strip of paper be to cover four of the faces, allowing $\frac{1}{2}$ inch for overlapping?

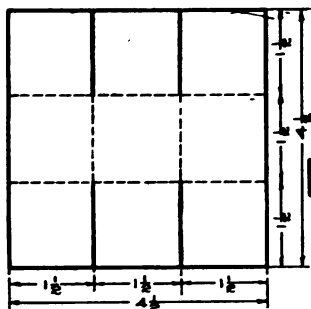


FIG 51

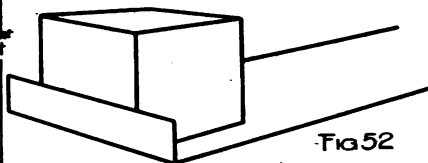


FIG 52

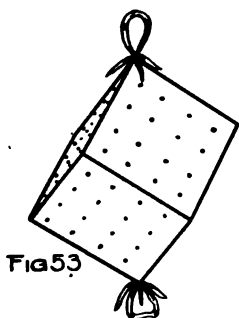


FIG 53

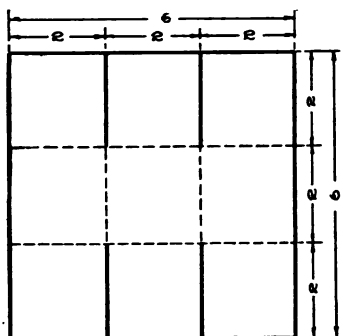


FIG 54

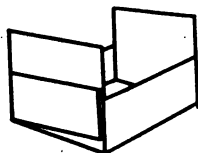
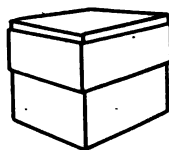
Cover
FIG 55

FIG 56

How wide must the strip be if $\frac{1}{2}$ inch is allowed on each side for pasting?

The strip should be $6\frac{1}{2}$ inches long and $2\frac{1}{2}$ inches wide.

Apply paste to the strip and place around four sides of cube, allowing $\frac{1}{2}$ inch to project on each side. (Fig. 52.)

Cut from edge of covering at corners of cube to edge of cube, and allow the half inch to paste to surfaces of cube not yet covered.

To cover the remaining two surfaces, cut two $1\frac{1}{2}$ -inch squares. From two edges of the $1\frac{1}{2}$ -inch squares cut freehand a strip about

$\frac{1}{4}$ inch wide. There still remains a square measuring $1\frac{1}{4}$ inch. Apply paste and place squares on uncovered surfaces of cube.

When thoroughly dry, with the use of a coarse darning needle, run a narrow ribbon or cord diagonally through the cube. Tie a bow at one corner and a hanger at the other, as shown in Fig. 53. For about three cents enough black-headed and white-headed pins may be had to stick into the cube. They are put into four surfaces only.

Box for Pin Holder

Every gift should be neatly and carefully placed into a box or package.

Two 6-inch squares of tinted construction paper are required to make the box. From the square for the box, cut away a narrow strip from each of two sides.

Measure two inches on each edge from corners, and connect corresponding dots by straight lines. Cut as indicated by continuous lines. Fig. 54.

To make the cover, the 6-inch square is left full size. Measure and cut as in box. The sides of the cover are to be double. Fig. 55. Instead of folding the edge of sides to the inside, as in the construction of former box covers, it is folded to the outside.

Instead of folding over the end pieces, cut away surplus. Small bands of red paper may be pasted around the box. A Christmas sticker may be used where the red bands of paper cross. This exercise, when carefully done, makes a very attractive gift. Fig. 56 shows the finished box.

Button Book

This makes a very interesting and practical gift to go into the home. Where there are several children, no gift could be more accept-

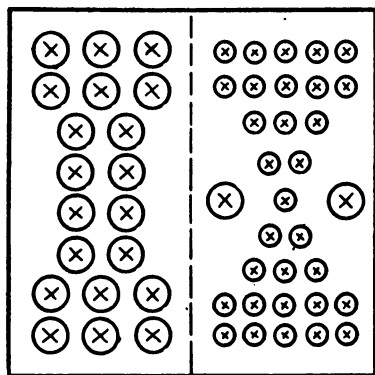


FIG 57

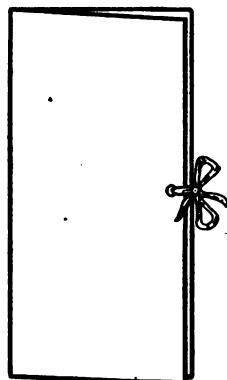


FIG 58

able coming from a second-grade child, than the button book. The actual cost amounts to about five cents.

Material:

Two $4\frac{1}{2}$ -inch squares of construction paper.

Buttons of various kinds and sizes.

Needle and thread. Paste.

Presentation:

Fold the $4\frac{1}{2}$ -inch squares into halves. On the outside of the folding, mark the places the buttons are to be sewed. (Fig. 57.) This affords a good opportunity for arrangement. The distance between the buttons depends on the size. Sew on the buttons. The buttons on each half may be sewed with one threading of the needle. All the stitches are on the under side of the sheet. Apply paste to the second $4\frac{1}{2}$ -inch square.

Place the square on which the buttons have been sewed, the stitched side down, on the pasted square. Press well. This covers all the stitches and makes it possible to remove any one of the buttons without interfering with the next. The card is folded into book shape.

About the middle of the long edges, on each side, and $\frac{1}{2}$ inch from outer edge, punch a hole. Into this hole insert and tie a narrow piece of ribbon or twine with which the two halves may be tied in book form. (Fig. 58.)

Envelope

If the teacher so desires an envelope may be constructed, into which the button book may be placed.

Material for December:

Basket—1 pkg. 6x9-inch construction paper.

Calendars { 2 pkgs. 6x9-inch tinted construction paper, each package to be of a different color.
50 calendar pads.

Folder for Calendar—1 pkg. 9x12-inch construction paper.

Pin Case { 1 pkg. 6x9-inch construction paper.
A selection of pins.
25 yards narrow ribbon, candle wicking, macrame cord, or any other material that may be used for a loop.
50 darning needles—(2 papers).

Box for { 1 pkg. 6x9-inch construction paper (holly green).

Pin Case { $\frac{1}{4}$ -inch strip red paper (holly red).

Button Book { 1 pkg. 6x9-inch construction paper.

{ Buttons of various kinds and sizes.
Needles and thread.

JANUARY

Weaving: Iron, Poker, or Kettle Holder

This is a problem which, when finished, is to go into the home. Great care should be used in constructing it as carefully as possible.

Purpose:

To aid in bringing about a closer relation between the home and the school.

To aid in giving pupils an appreciation for good color combinations.

To aid in teaching pupils to respect labor, and an appreciation for hand-made articles.

To familiarize the pupils with the terms warp and woof.

To create within the child a desire to do for some one else.

To continue a line of drawing, leads to the mechanical drawing and the practical number work involved, leading to formal number.

Material:

A piece of juteboard 5 inches wide and 7 inches long. This may be cut from a box, or any stiff scrap paper.

A wooden needle, which might be made by the boys of the fifth grade.

Presentation:

It would be a most excellent plan to give each pupil a piece of very coarse material—say, burlap—and have them draw out some of the threads. Lead them to see that part of the threads run one way and part another. Introduce the terms “warp” and “woof.”

While the pupils are threading their looms, use the above terms.

There are very few pupils who need to be urged to make articles for the home. Show the pupils a finished holder.

To construct the cardboard loom, proceed as follows:

Place the rectangular piece of juteboard so the short edges are parallel with the front edge of the desk.

Draw lines $\frac{1}{2}$ -inch from front and back edges. (Fig. 59.) Along these lines place dots $\frac{1}{2}$ -inch apart, and connect corresponding dots by straight lines. (Fig. 60.)

We wish the warp threads to be $\frac{1}{4}$ -inch apart, but since the pupils of this grade measure only in half inches, the division in quarters must be done approximately.

Between the lines just drawn, and on the front and back edges, place dots dividing the half-inch spaces, so we have quarters. Connect the corresponding dots by straight lines. (Fig. 61.)



FIG 59

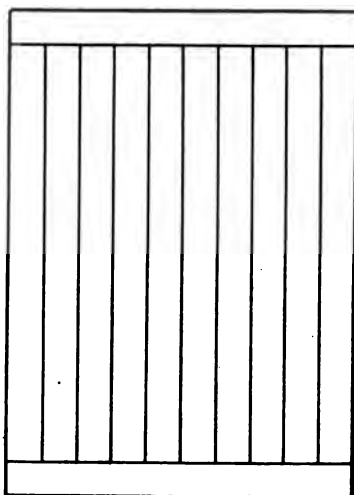


FIG 60

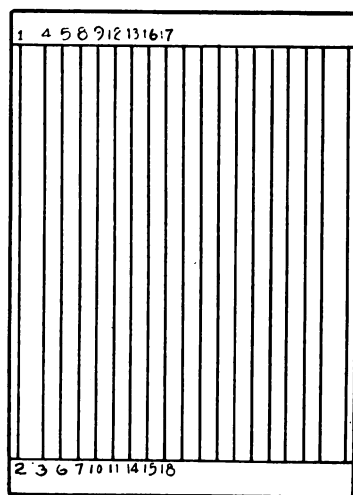


FIG 61



FIG 62

It will be observed that in the first and last half inch, the division is not exactly in the center, but that the dots are placed approximately $\frac{1}{8}$ inch from the edges. This is done to avoid too long a space in weaving around the edges.

To thread the loom, first number the lines as shown in Fig. 61. Puncture with the darning needle a hole through each point where the vertical lines representing the warp threads meet the horizontal lines.

With a fairly long piece of carpet warp threaded in the darning needle, come up through the hole marked 1, leaving an end. Next, down through 2, back to the under side of 1. With the end left, and the thread in the needle, tie a hard knot close to 1. Come up through 4 and down through 3 and back to 4. Come up through 4 and cross over to 5. Down 5 and up through 6 and back to 5. Down 5 a second time and over to 8. Come up 8, down to 7. Continue in this way until the loom is threaded on both sides.

Caution: Do not draw the warp threads too tightly in threading the loom, as allowance must be made for the passing over and under of the woof.

Begin to weave about the middle of one side, weaving around edges until once around. Here it will be observed that if the weaving is continued, the thread (the woof) passes over and under the same warp threads as in the first time around. This is due to the fact that there is an even number of warp threads. To prevent this passing under and over the same warp threads, we must do as the Indians do, and that is, to let the weaver pass under (never over) two warp threads, and then continue under one and over until around. At this point it is found necessary to pass the weaver (the woof) under the warp threads again.

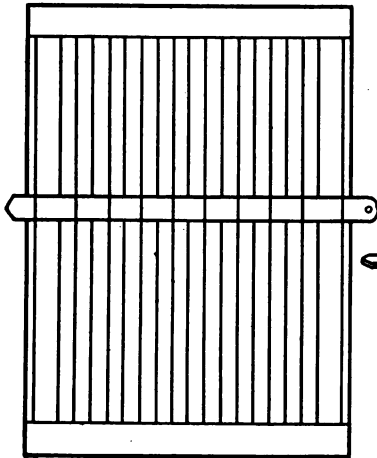


FIG 63

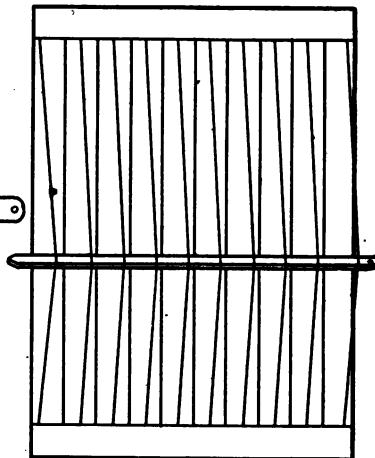


FIG 64

In this way the weaving is continued until the top is reached. The passing under of two threads may be avoided by introducing an extra warp thread, thus making an uneven number of threads, which is absolutely necessary in continuous weaving. This extra thread may be put in between any two threads, but only on one side.

When introducing new woof threads, allow the ends to overlap and continue as before.

Another interesting problem to make in light woodwork, to help out in the primary weaving, is that of a small ruler about 8 inches long and $\frac{1}{2}$ inch wide, pointed at one end, as shown in Fig. 62. This ruler may be woven over and under the warp threads, as shown in Fig. 63. When woven in flat, turn on edge so that it raises the threads, as shown in Fig. 64. The weaver (woof) may now be passed under the raised threads, and pushed down in place. The ruler may now be passed under a series of other threads, and the weaver again passed under.

When finished, break the cardboard along holes, and remove that part of the card between the layer of weaving.

The opening at top and bottom of weaving may now be closed by sewing over and over.



Fig. 65

For this, use the needles that were used in the third grade in sewing the word book.

The holder is now completed. (Fig. 65.)

The Doll House

There is no line of work that affords so great an opportunity for real, genuine number and language, both oral and written, as the construction of furniture for the doll house.

If the room is not furnished with a doll house, set aside a window sill or a table which may be appropriated for this purpose.

If the teacher is sufficiently interested she may get a couple of orange or lemon crates for the asking.

Place one upon the other, so that the open sides face the room, and you have a good foundation for a doll house of four rooms. A little stiff paper placed around the sides makes it possible to paper the rooms and thus carry out a different color scheme for each room.

It is true that only one doll house is being furnished in the schoolroom, but somewhere in the homes there might be found as many doll houses as there are children in the room. There are few teachers who do not appreciate the value of construction to the children. Most teachers know so well the purpose of this work that they are able to defend it when it is criticized by those who do not know of its value, and who are inclined to look upon it as mere play.

The work in the first grade is a combination of measuring and folding. The work of the second grade should largely be measuring.

Purpose:

To begin to create an interest in the care of the home.

To create, through the child's interest in construction, an interest in other lines of work.

To teach appreciation of harmony of color.

To make concrete much that is abstract, especially number.

Material:

Tinted construction paper for the furniture.

Tinted construction paper, jute, and candle wicking for the floor coverings.

Mat for Kitchen Floor

The first covering for the floor may be woven of strips of tinted construction paper one-half inch wide.

The dimensions of the mat must be determined by the size of the kitchen floor. If the mat is to be 8x10 inches, proceed as follows:

One inch from each corner along the edges of the paper, place dots. Lay the ruler across corresponding dots, and draw line extend-

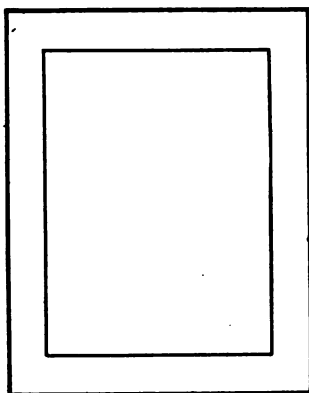


FIG 66

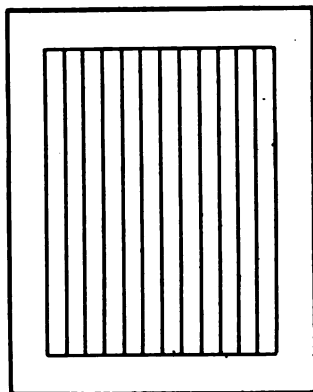


FIG 67

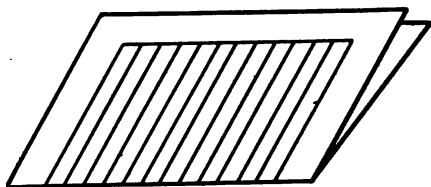


FIG 68

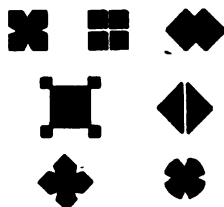


FIG 69

ing one inch from one edge to one inch from the opposite edge. Fig. 66.

Place dots one-half inch apart on shorter lines just drawn and connect corresponding dots by straight lines. Fig. 67.

Fold short edges together as shown in Fig. 68, and cut along vertical lines to horizontal line drawn one inch from the edge of the paper. Unfold, and the foundation part of the mat is finished.

Pass to each pupil another sheet of paper of another tint, 8x10 inches. Place the ruler along the long edges and place dots one-half inch apart. Connect corresponding dots by straight lines. Cut into one-half inch strips by following lines drawn. Weave these strips into the foundation mat as shown in Fig. 70.

Making a Block Print

If so desired, small block prints may be made of corks or various shaped pieces of wood. The head of a match may be cut away and the opposite end of the stick used as a block print. Small sticks, like the colored ones used in the first grade, make good square prints. Quarter-inch dowel rods, such as are used in manual training, make

good circular prints. Small blocks, a quarter, or even a half-inch square, at the ends, may be used as prints. With a small file (a finger nail file will do), these blocks may be cut or filed across and in the edges, so that very simple but interesting prints may be made.

Fig. 69 suggests a few simple prints made of small pieces of wood or corks.

How to Use the Block Print

A small piece of felt, or any other piece of cloth that will absorb, may be saturated with dye. The block is first pressed to the saturated piece of cloth, and then stamped on the surface where the design is

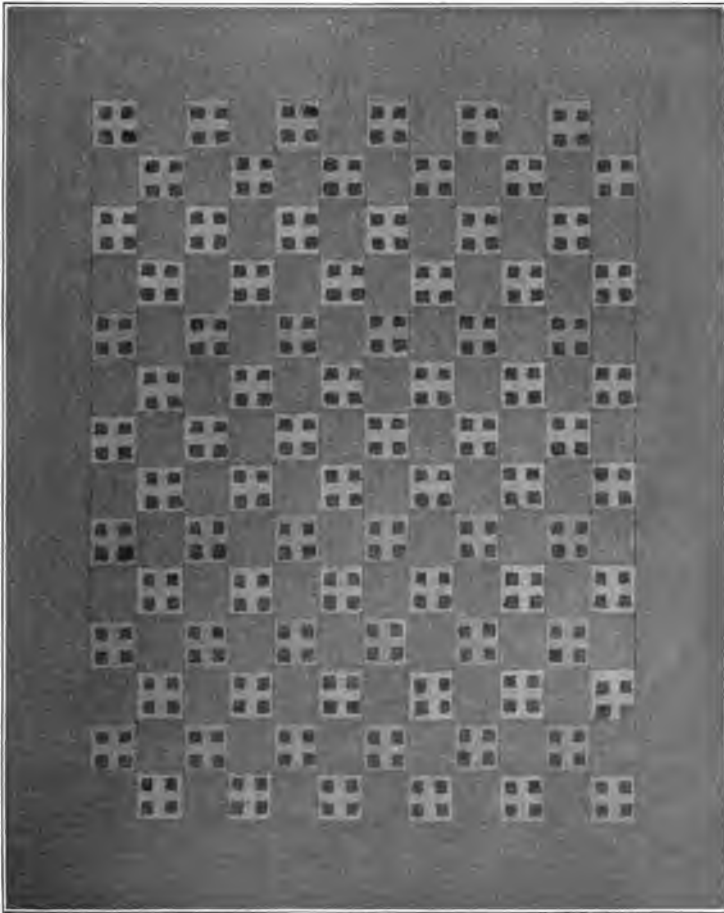


Fig. 70 Finished Kitchen Mat.

wanted. This is not a slow and tedious process, but one that works up very quickly and very effectively. When a mat is finished, a block print may be stamped on each light square. If the mat is given a coat of shellac or varnish, it makes a good floor covering and looks a little like linoleum.

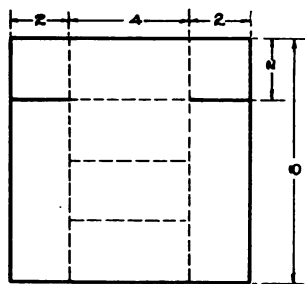


FIG 71

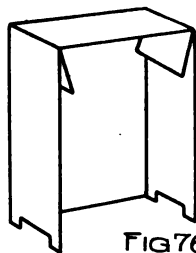


FIG 76

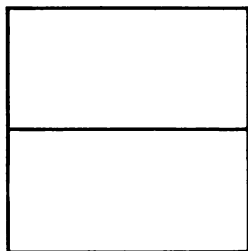


FIG 72

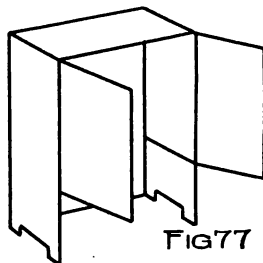


FIG 77

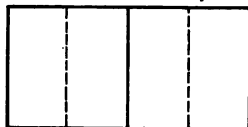


FIG 73

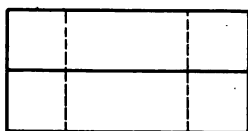


FIG 74

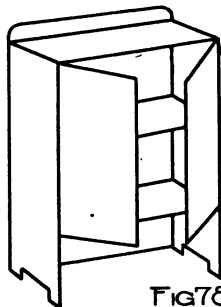


FIG 78



FIG 75

Making a Cupboard

In the first grade, each piece of furniture was made as simple as possible. In this grade, each piece may be made in parts and then assembled.

Material:

Two 6-inch or two 8-inch squares of tinted construction paper.

First. Draw an 8-inch square. (Fig. 71.)

Second. Use 2-inch measurements, and draw the lines as shown in Fig. 71. Continuous lines are to be cut. The dotted vertical lines should be scored.

The two lower horizontal dotted lines show position of shelves.

Third. Fig. 72 shows 8-inch square; one-half to be used for doors and the other half for shelves.

Fourth. Fig. 73 shows where to cut and where to score doors.

Fifth. Fig. 74 shows cutting of shelves.

Sixth. Fig. 75 shows folding for shelves.

Seventh. Fig. 76 shows the way Fig. 71 is folded.

Eighth. Fig. 77 shows the way the doors are pasted to inside.

Ninth. Fig. 78 shows placing of shelves and finished cupboard.

To Make a Bed

First. Draw a rectangle 6 inches wide and 8 inches long.

Second. Draw dotted lines 2 inches apart as shown in Fig. 79.

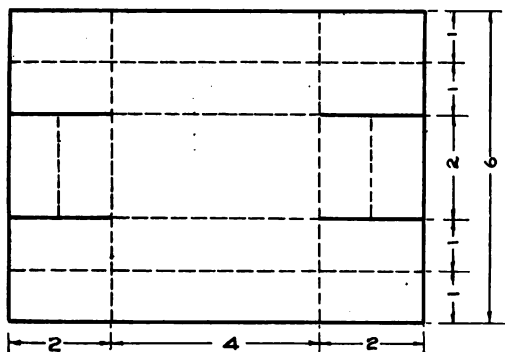


FIG 79

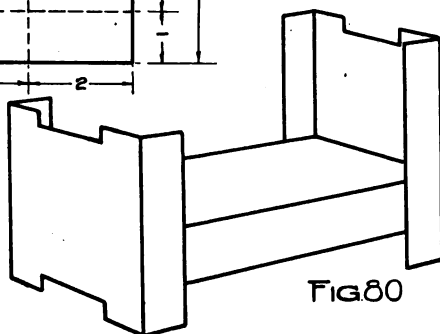


FIG 80

Third. Draw continuous lines and proceed to fold as when making a box with double sides. (See work of former month.)

Fourth. Cut rectangle $3\frac{1}{2}$ inches long and 2 inches wider than the box. Fold over 1 inch along sides and paste to head of bed as shown in Fig. 80. This adds strength.

Fifth. Cut rectangle $2\frac{1}{2}$ inches long and 2 inches wider than box.

Fold over 1 inch along sides and paste to foot of bed. Cut head and foot as shown in Fig. 80.

By doubling head and foot strength is added to the bed.

To Make a Table

First. Draw a rectangle 8 inches long and 6 inches wide. Fig. 81.

Second. Draw dotted lines 2 inches apart.

Third. Cut continuous lines so the square corners will fold and

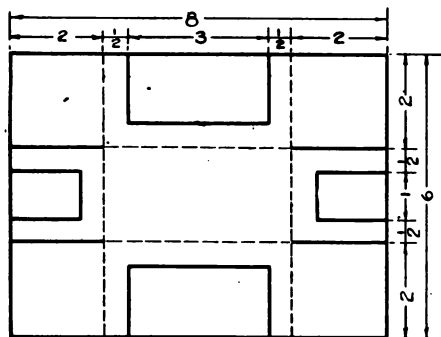


FIG 81

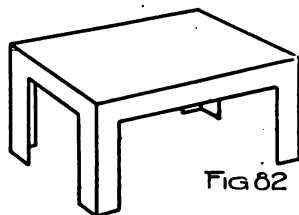


FIG 82

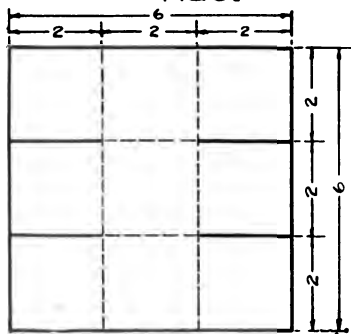


FIG 83

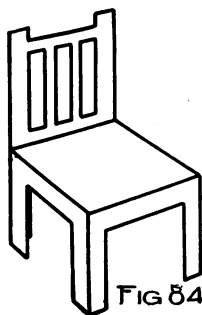


FIG 84

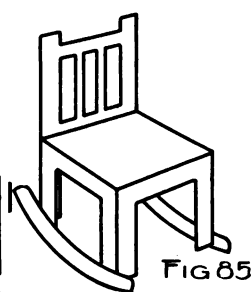


FIG 85

paste in end, before cutting legs. The several thicknesses add strength to the legs of the table.

Fourth. Cut all remaining continuous lines. See Fig. 82.

Number Lesson

How much longer is the rectangle than it is wide?

Draw a line equal in length to one short edge and one long edge put together. What is the distance half way around the rectangle?

What is the length of the two short edges put together?

What is the length of the two long edges put together?

What is the distance around the rectangle? Use the word perimeter.

What is the perimeter of the top of the finished table?

To Make a Chair

First. Draw a 6-inch square.

Second. Draw dotted lines 2 inches apart.

Third. Mark lines to be cut. (This is shown in the drawing by the continuous lines.) Fig. 83.

Fourth. Paste and cut, as in table. Figs. 84, 85.

Making a Davenport

Follow drawing. Fig. 86.

Place strip of squares cut away so as to form back.

Cut openings in back before pasting in place. Fig. 87.

Making a Dresser

Drawings 88 and 89 show construction.

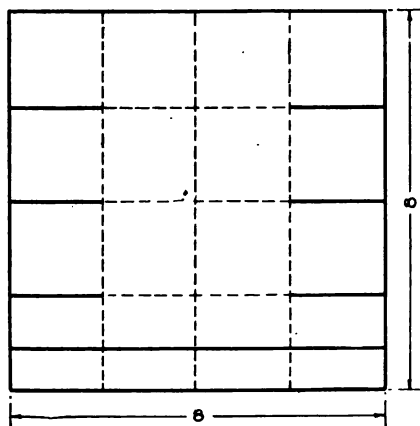


FIG 86

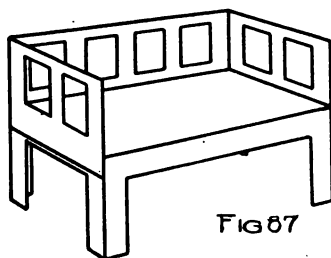
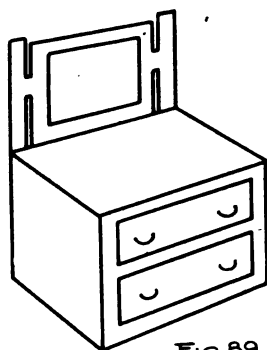
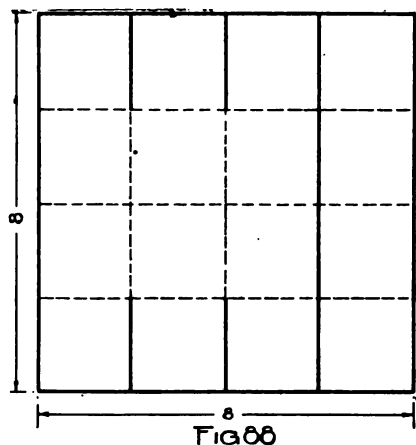


FIG 87



Material for January:

Poker, Iron or Kettle Holder	$\left\{ \begin{array}{l} 2 \text{ sheets jute board cut } 5 \times 7 \text{ inches.} \\ \text{A wooden needle, Fig. 62.} \\ 1 \text{ spool carpet warp.} \\ 3\frac{1}{2} \text{ lbs. jute or cotton roving.} \end{array} \right.$

Doll House—

Mat for	$\left\{ \begin{array}{l} 2 \text{ pkgs } 9 \times 12 \text{ inch construction paper of different colors.} \\ 1 \text{ box of pads.} \\ 1 \text{ box of sticks.} \end{array} \right.$
Kitchen Floor	

Cupboard—1 pkg. 9x12-inch construction paper.

Bed—1 pkg. 9x12-inch construction paper.

Table—1 pkg. 9x12-inch construction paper.

Chair—1 pkg. 6x9-inch construction paper.

Davenport—1 pkg. 9x12-inch construction paper.

Dresser—1 pkg. 9x12-inch construction paper.

FEBRUARY

Pupils of the beginning second grade may do much of the work as outlined for September.

Cutting and Tearing

Purpose:

To aid in doing original work, and to train the mind, hand, and eye to work together. To lead to skill.

Material:

Number paper. Tinted construction paper. Manila drawing, and kraft paper.

Presentation:

Pupils have gained, through the story and history of the month, numerous ideas concerning the customs and modes of living of the people during the times of Washington and Lincoln. Many of these ideas may be illustrated in the cuttings and tearings.

Folding and Cutting for Valentines

Very interesting cuttings may be made by first folding the paper, one, two, or even three times and then cutting.

To make a double heart for a valentine, use a piece of white drawing paper 4x8 inches. Fold the short edges together, then fold

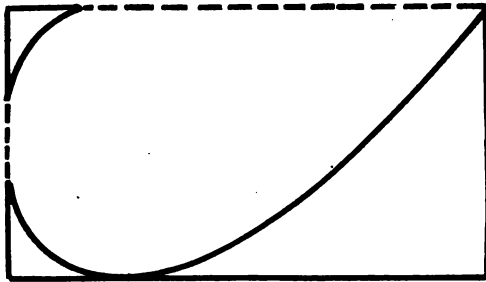


FIG 90

the remaining short edges together, as shown in Fig. 90. Draw a heart shape on the folded square, and cut on the curves, leaving "hinges" as shown. On the inside print a message. Cut a small heart from red paper and paste it in the middle of the outside. For other suggestions see Figs. 127 and 128, first grade.

Folding for Valentines

Purpose:

To gain neatness and accuracy through interest in valentines.

Material:

A 4, 5, or 6-inch square of colored paper.

Presentation:

This exercise requires little or no effort on the part of the teacher to work up enthusiasm, for it is already there. For the first folding, furnish each child with a colored square. By careful questioning get from the children as much number and language as possible. The following are suggestive questions:

What is the shape of your paper?

How many edges has it?

What can you say of their length?

How many corners?

What kind of corners?

Hold paper by two diagonal corners: fold these corners together: what is the shape of your paper now?

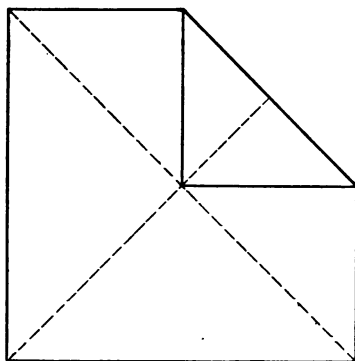


FIG 91

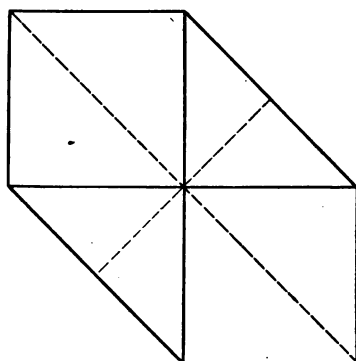


FIG 92

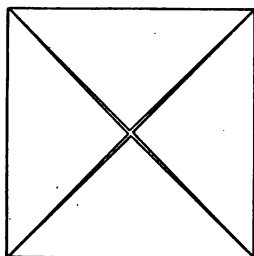


FIG 93

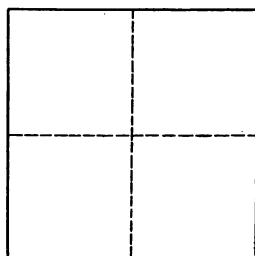


FIG 94

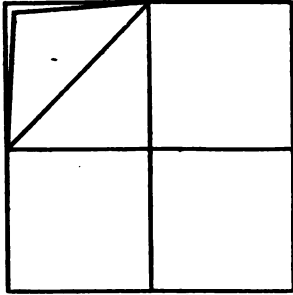
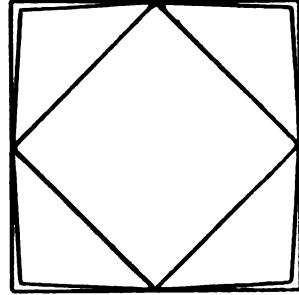
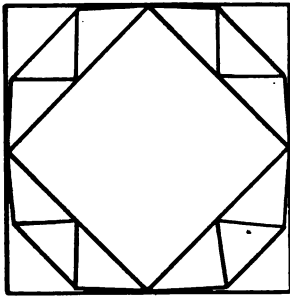
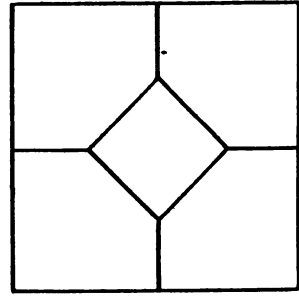
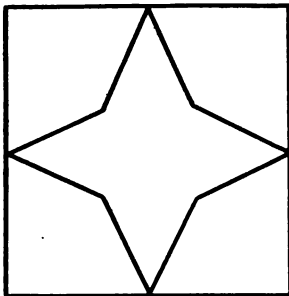
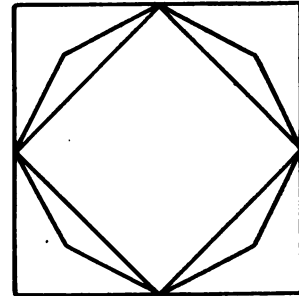
- How many edges has a triangle? More or less than a square?
 How many more has a square?
 What kind of corners has the triangle? How many?
 Unfold the paper: what part of the square is each triangle?
 Hold paper by corners at ends of crease: fold these corners together: unfold: how many triangles are there now? How many times the number of triangles there were before?
 What part of the square is each triangle?
 Find center of square. Fold upper right corner to center: how many corners has your paper now? Fig. 91.
 How many more than a square?
 How many more than a triangle?
 How many square corners has it?
 Fold the lower left corner to the center. Fig. 92. How many edges has your paper now?
 How many more than a square?
 How many times the number a triangle has?
 How many corners?
 How many square corners?
 Fold the other two corners to the center: Fig. 93. How many triangles can you see?
 What part of the square is each triangle?
 Reverse the paper so that the closed side is next to you: Fig. 94. How many squares can you see?
 What part of the whole is each square?
 Find center of the paper: fold each corner inward to the center. Reverse paper so you are looking at four squares whose loose corners meet at center of paper. Lift loose corner of upper left square. Fold it back to upper left corner of paper. Fig. 95. How many triangles can you see? How many squares? How many more squares than triangles?
 Fold other corners in the same manner. Fig. 96.
 This finishes the simplest kind of formal folding and may be called Folding No. 4. A small picture may be placed in the center, thus making a very interesting valentine.

Modified Foldings

- Fold No. 4 and turn corners downward as shown in Fig. 97. Fold Fig. 97 and then fold points inward, as shown in Fig. 98.
 Fold Fig. 98, and instead of folding points under, allow them to fold outward as shown in Fig. 99.
 Fold Fig. 99. Turn upward, so that points fold under as shown in Fig. 99A.
 There is almost an endless number of paper foldings, of which the foregoing are merely suggestions.

Envelopes for Valentines

This may be simply a folder of tinted construction paper, made as suggested by the drawing in Fig. 100. Cut on continuous lines. Fold on all dotted lines. This makes a square folder.

**FIG 95****FIG 96****FIG 97****FIG 98****FIG 99****FIG 99A**

Cutting Envelope

For details of construction, see September outline.

Box for Colored Sticks and Use of Game

See September outline.

Drawing of Squares

Purpose:

To give pupils an opportunity for accurate drawing of corners (square).

Material:

Tinted construction paper.

Presentation:

Pass to each child one sheet of tinted construction paper. Place the following problems on the board:

Draw a 2-inch square.

Draw another square twice as long.

Draw a 6-inch square.

Draw another one-half as long.

Draw a 3-inch square.

Draw another twice as long.

Draw a 5-inch square.

Draw another one-half as long.

Enlarge upon the above.

Divide the 6-inch square into 1-inch squares. Do this by placing dots on the right and left edges, and front and back 1 inch apart. Connect corresponding dots by straight lines, and cut.

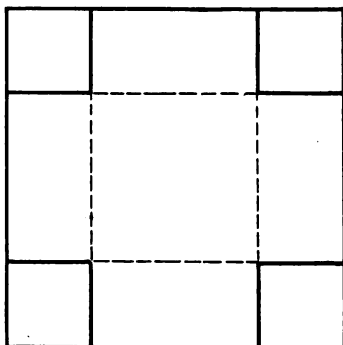


FIG. 100

How many squares in one row? In two rows? Three rows? Four rows? Five rows? Six rows?

Cut into 1-inch squares.

How many 1-inch squares will it take to cover a 4-inch square? A 3-inch square?

Develop 3 threes and 4 fours.

Reserve the 1-inch squares for further use.

Badges

The badges are constructed for the pupils to wear on the birthdays of Lincoln and Washington. They may be used again on Decoration Day.

Purpose:

To arouse patriotism.

To aid in interesting pupils in the history for the month.

Material:

Red, white, and blue tinted construction paper. (Any kind of white paper will answer the purpose.)

Presentation:

Have the pupils cut from red paper a $1\frac{1}{2}$ -inch square, a 1-inch square of white paper, and a $\frac{1}{2}$ -inch square of blue paper.

Cut streamers $\frac{1}{2} \times 4$ inches, one of each of the above colors. Arrange as shown in Fig. 101.

Drawing of Oblong

Draw two oblongs, each 1×4 inches.

Draw an oblong 2×4 inches.

How many square inches will it take to cover the oblong 2×4 inches?

Draw an oblong 3×6 inches (dark brown).

Draw an oblong $2\frac{1}{2} \times 5\frac{1}{2}$ inches (tan)

Valentines

To make valentine, use the 3×6 -inch and $2\frac{1}{2} \times 5\frac{1}{2}$ inch oblongs cut from the brown and tan construction paper in the previous lesson.

Fold the oblongs into halves by bringing the short edges together. Place the tan within the brown, and tie at the back with any kind of twine (candle wicking is very attractive material for this).

Place a message on the inside.

Folder for Valentine

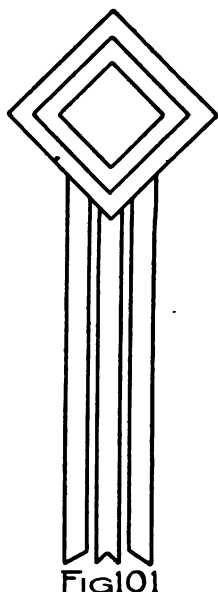
Develop with the class the construction for a folder. Do this by a series of questions similar to the following:

The valentine is a 3-inch square: how long must the folder be when finished? How wide must it be?

When making the folder, it is not necessary to have the side flaps overlap when folded to center.

How long must the side flaps be in order to meet at center of folder (Fig. 102)?

The flap above and the one below must overlap. By making each two inches wide, the valentine is held very securely within the folder. Very interesting seals may be cut of the tan paper and pasted to keep the folder closed. Fig. 103.



Raffia Mat

To interest the pupils in woven fabrics.

To give them an idea how matting is made. The use of machinery is emphasized.

To lead them to see that, from a sanitary point of view, matting is better than carpet because the smooth finish prevents dirt accumulating; and that matting may be washed without injuring it.

To teach the pupils the value of a handmade article.

Pieces of strawboard 6x8 inches (from strawboard boxes will do).

Carpet warp, to be used in threading the loom.

Raffia to be used for the woof.

Place the 6x8-inch piece of paper so the short edges are parallel with the front edge of the desk. Draw lines one inch from the short edges across the paper. On these lines, mark off spaces of $\frac{1}{2}$ inch. If $\frac{1}{4}$ -inch spaces are desired, place a dot between each of the $\frac{1}{2}$ -inch dots. This may be done without the ruler. Pierce the cardboard at each dot.

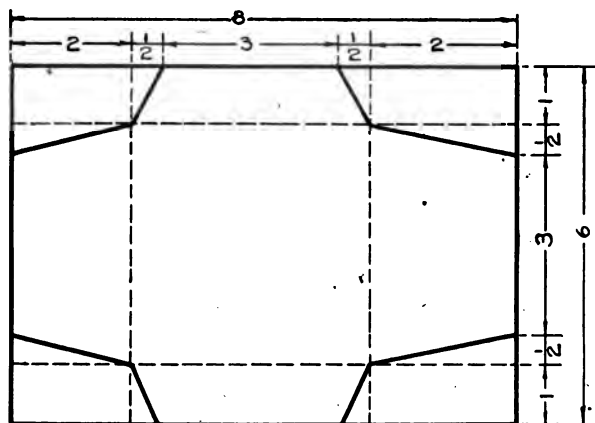


FIG 102



FIG 103

To thread the loom, see Fig. 104. Come up through 1, leaving an end. Down through 2, up 3, down 4. With the end left, and the thread in the needle, tie a hard knot close to 4. Come up 5 and down 6. Continue in this way until the loom is threaded. When finished, the upper side of the loom looks like Fig. 104. The under side looks like Fig. 105. In order to keep the two outside threads from drawing to the center, stitch over them in several places.

Serving Table

Pass to each child an 8-inch square of tinted construction paper of the desired color. On the right and left edges place dots 2 inches apart, and connect corresponding dots by straight lines. On the front and back edges and 2 inches from the corners, place dots. Connect corresponding dots by straight lines. Cut along continuous lines and fold on dotted lines. Fig. 106. Fold, paste, and cut as shown in Fig. 107.

Sideboard

Pass to each child an 8-inch square. Make a pattern drawing as in Fig. 106. Cut, fold and paste, as shown in Fig. 108.

Stove

Cut an 8-inch square from a 9x12 inch sheet of tinted construction paper. Place dots along the right and left edges 2 inches apart. Connect corresponding dots by straight lines. Place dots along front and back edges 2 inches apart. Connect corresponding dots by straight lines. Cut away one row of squares. Cut and paste into box form. Cut feet as shown in Fig. 109.

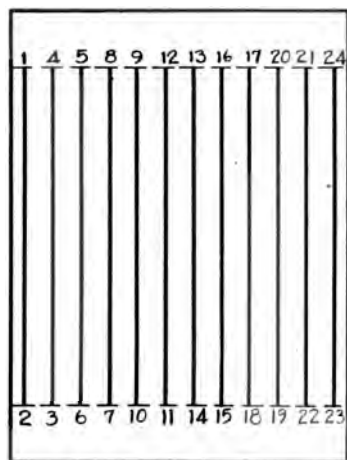


FIG104

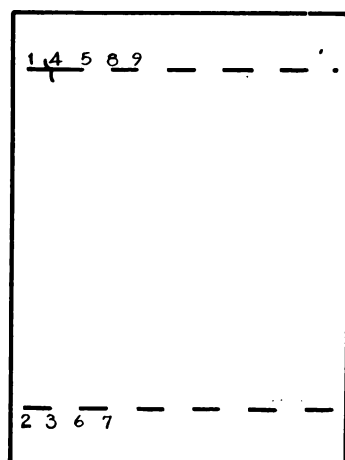
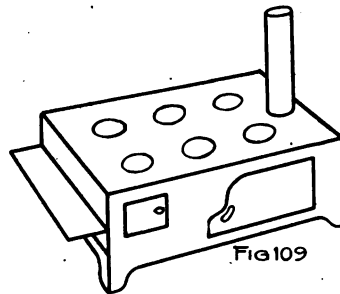
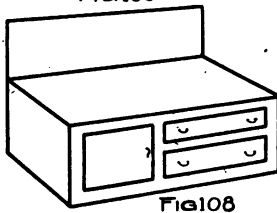
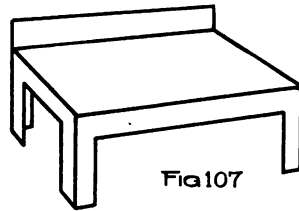
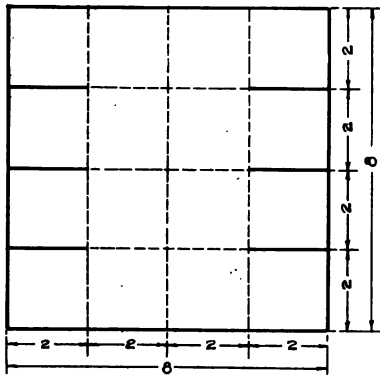


FIG105

Fold one of the extra squares in halves and paste to front of stove for hearth. See Fig. 109. Cut circles of another tint of same colored paper, and paste to top. Cut doors freehand, the same color as the circles, and paste to the side. Fig. 109.



Woven Rugs

Interesting rugs may be woven of any of the fiber materials in stock for the bedroom, parlor and dining room.

These rugs may be woven on a piece of cardboard, threaded on one side only. Fig. 104. Care must be exercised in keeping the two outside or end warp threads from being drawn in as the weaving progresses.

Fig. 110 shows several little rugs woven on the cardboard loom.

Material for February:

Valentines { 1 pkg. 9x12-inch construction paper.
Use scraps for cuttings.
1 pkg. 6x9-inch construction paper.

Folder for Valentines—1 pkg. 6x9-inch construction paper.

Raffia Mat { 50 pieces of 6x8-inch strawboard.
2 lbs. natural raffia.
½ lb. color for border.

Serving Table—1 pkg. 9x12-inch construction paper.

Sideboard—1 pkg. 9x12-inch construction paper.

Stove—1 pkg. 9x12-inch construction paper.



Fig. 110 Finished Woven Rugs.

Badges { 1 pkg. 6x9-inch red construction paper.
1 pkg. 6x9-inch white construction paper.
1 pkg. 6x9-inch blue construction paper.
Sufficient for 300 pupils.

MARCH

Window Boxes for Doll House

The interest in the doll house has not as yet died out. The window boxes make a very interesting problem.

Purpose:

- To arouse interest in the windows at home.
- To aid in reading a pattern drawing.
- To encourage simple mechanical drawing and mathematics.

Material:

Tinted construction paper.

Presentation:

A general talk on beautifying the home should precede the construction of window boxes for the doll house.

Place on the blackboard a pattern drawing for a window box, when finished, that shall be $5 \times 1 \times 1\frac{1}{2}$ inches. Fig. 110.

The sides and ends are planned so that the box is one inch deep when the paper is left single. Fold the edges of the ends and sides inward to crease, making the box one-half inch deep.

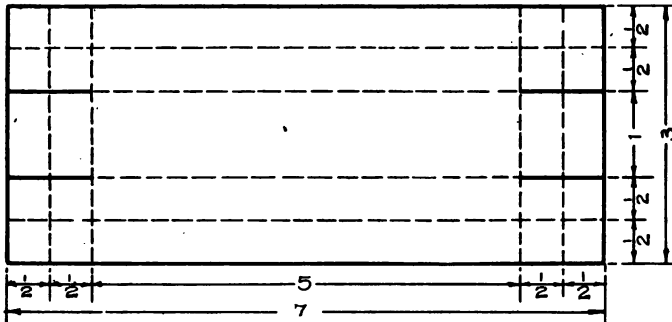
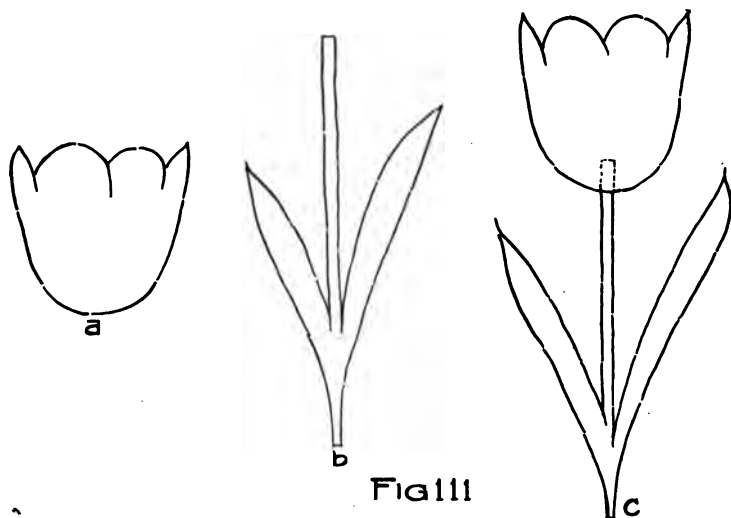


FIG 110

Artificial Flowers

Most attractive flowers may be cut freehand from scraps of colored paper as shown in Fig. 111.

The flower may be cut first as shown at "a," Fig. 111. Next cut



the stem and leaves as shown, "b," Fig. 111. The flower may now be pasted to the stem by allowing the stem to paste to the under side of the flower as shown at "c," Fig. 111. A number of flowers are cut in this way and pasted to the bottom of the box by folding over about $\frac{1}{4}$ inch of the stem.

Spelling Book

In addition to the box for initial blends which is a problem directly related to the schoolroom administration the spelling book should be constructed. This makes a most interesting monthly problem, as all communities are interested in spelling. Children should be encouraged to keep their spelling books for the year.

No space will be devoted to a description of the spelling book, as its construction is the same as described in Fig. 43.

Box for Initial Blends (Work in English)

The pupils have already constructed numerous boxes of various colors and sizes.

Allow the pupils to have the game of "Initial Blends."

Discuss with them the advisability of constructing some sort of a receptacle to hold the various parts of the game.

Purpose:

To provide a way for the pupils to aid in caring for materials used in the schoolroom.

To provide concrete number work.

Material:

Tinted construction paper. Library paste.

Presentation:

Get the pupils to decide which would be better—a box or an envelope. If it is thought best to use a box, how long should such a box be? How wide? How deep? What kind of paper would be good? Why?

A box 3 inches long and 2 inches wide and 1 inch deep would be large enough. Try to keep the dimensions of the box in whole inches.

If the box is to be 3 inches long, 2 inches wide, and 1 inch deep, when finished, how large must the piece of paper be to make the box if the sides and ends are made double?

If the teacher will draw on the board a rectangle 3x2 inches and then add the sides and ends while developing the dimensions, a foundation is being laid to teach the pupils to think and act intelligently. Fig. 112 shows the drawing for the cover of the box. It will be remembered that all dotted lines are to be folded and all continuous lines cut.

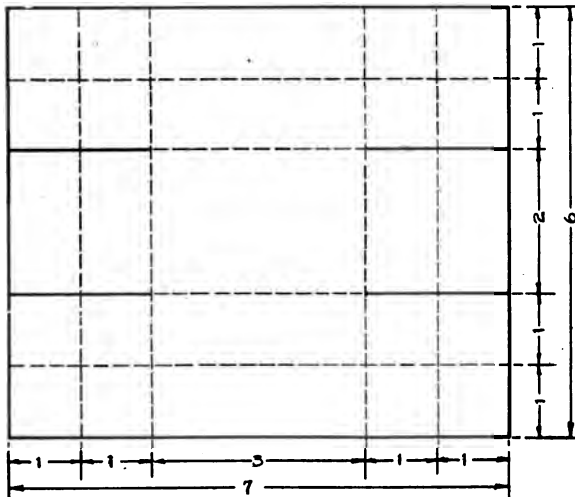


Fig 112

bl	ack	dw	indle	pl	ay	sn	ow	tr	y
ow	ow		ell		ant		are		eat
ew	ew		arf		ow		ake		ouble
own	own		ower		int		are		ine
eeze	ame		ame		oud		un		ice
ought	ow		ow		ay		eak		it
oud	icnd		ost		atter		ing		air
ay	fr		ce		amp		out		eck
ear					are		ay		in
ow	ad		ow		ow		ar		ow
awl	ow		ce		cep		ay		ine
umb	gl				umber		cal		ect
aw			ay		oke		cep		at
ive	gr		ound		all		ing		em
own			ow		ile		ift		ink

Fig. 113 Initial Blends.

To Make the Box:

Cut a second rectangle the same as the one used for the cover. Since second-grade pupils cannot measure in small fractional parts cut freehand a narrow strip between $\frac{1}{8}$ inch and $\frac{1}{4}$ inch wide from one long edge and one short edge. Proceed with all other measure-

ments the same as when making the cover. The narrow strip cut away will cause the box to be a trifle smaller than the cover.

The Game

Fig. 113 shows the game as it comes from the print shop.

To separate the large sheets into the various parts cut on all

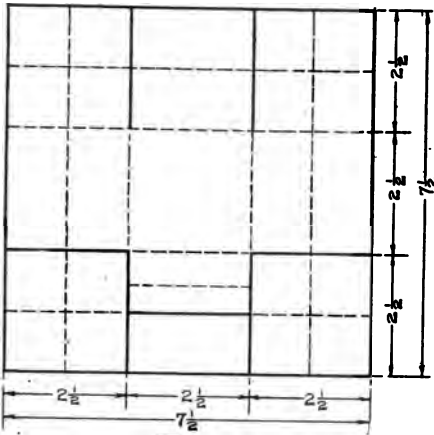


Fig 114

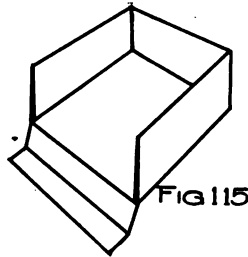


Fig 115

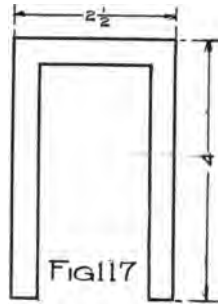


Fig 117

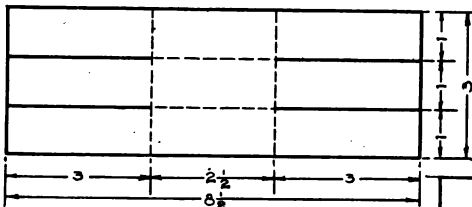


Fig 116

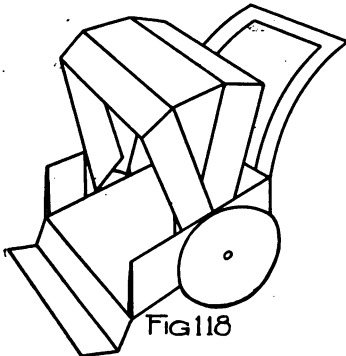


Fig 118

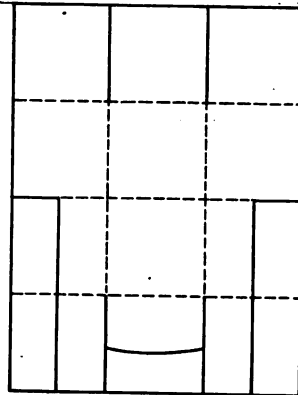


Fig 119

continuous lines. By so doing the initial letters are found on the various squares folded by dotted lines which indicate the number of endings which may be found in the box.

Care should be taken to not have the pupil spend his time looking for the endings of only one initial blend. Have him place a number of the squares on which the initial blends are found on the desk, and every time he picks up an ending place it in its proper place on the square to which it belongs. By so doing every time he picks up an ending there is a place for it and we get away from the great amount of time wasted by looking for just one particular ending.

Go-Cart

This is a problem in which most children can be interested. It follows the play idea, a phase of the work which we cannot afford to slight. Through this play interest most valuable lessons may be derived along academic lines.

To Make the Cart

Draw and cut a seven and one-half inch square of tinted construction paper. On the edges place dots two and one-half inches apart. Connect the corresponding dots by straight lines. Cut on continuous lines and fold on dotted lines as shown in Fig. 114. When folded this makes the box part of the cart as shown in Fig. 115.

To Make the Hood

Draw a rectangle $3 \times 8\frac{1}{2}$ inches. On the short edges place dots one inch apart and connect corresponding dots by straight lines. On the long edges place dots 3 inches from short edges and connect corresponding dots by straight lines as shown in Fig. 116. When folded it looks like hood shown in Fig. 118.

The Wheels

To make the wheels use a pattern similar to the circular pieces of paper used in the tops of milk bottles.

The Handle

Fig. 117 shows drawing of handle; one inch of each of the strips is pasted to the back of the box part as shown in Fig. 118.

The parts are assembled and held together by using the small black collar buttons. Fig. 118 shows finished cart.

Fig. 119 shows another way for making the box part of the go-cart. A box of this kind requires four wheels instead of two as shown in Fig. 118.

Material for March:

- Window Boxes For Doll House { 1 pkg. 6x9-inch construction paper.
Colored scraps for flowers.
- Spelling Book { 3 pkgs. language or number paper.
1 pkg. 6x9-inch construction paper.
Carpet warp.
2 pkgs. darning needles.
- Box for Initial Blends { 1 pkg. 9x12-inch construction paper
50 sheets initial blends.
- Go-Cart { 1 pkg. 9x12-inch construction paper.
1 pkg. 6x9-inch construction paper.

APRIL

Cutting and Tearing

The cutting and tearing for this month center around the Easter interests and the various signs of spring.

Have the pupils cut and tear flowers, rabbits, chickens, ducks, etc. Continue to have the pupils observe the various signs of spring and then to cut or tear in paper. Girls jumping rope and boys playing marbles make interesting cuttings.

Modeling

Chickens, ducks, rabbits, model to illustrate games.

Spelling Book

Construct a spelling book similar to the one previously described.

It would be a most excellent plan to make a book for each month of the school year. It no doubt would add a great deal to the interest in spelling and offers excellent opportunity to make practical the applied art.

May Basket

Single Weave. In the January outline direction was given for the weaving of a square mat. This exercise may be repeated at this time, but instead of using the weaving as a mat it may be folded into an attractive May basket.

First. Fold diagonal of square mat, Fig. 120.

Second. Fold edges to diagonal, Fig. 121.

Third. Unfold, Fig. 122.

Fourth. Fold on dotted line "ab," Fig. 123.

This triangle folds to the back, Fig. 124.

Fifth. Let "a" overlap "b" at back, Fig. 125.

Punch at back and make hanger of macrame twine or candle wicking, Fig. 125.

Decoration of Basket

If the teacher so desires the pupils may be allowed to again turn to the stick printing. An interesting print might be stamped on each light square of the mat, thus adding considerable interest to the finished basket.

Double Woven May Basket

Material:

Two rectangles, each $2\frac{1}{2} \times 9$ inches, of different tints or contrasting colors of tinted construction paper.

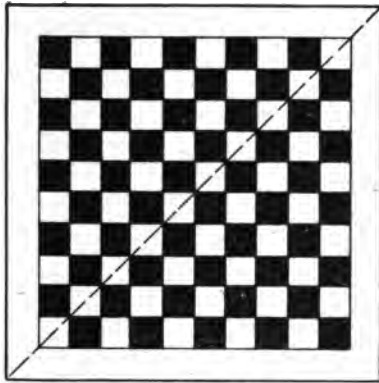


Fig120



Fig121

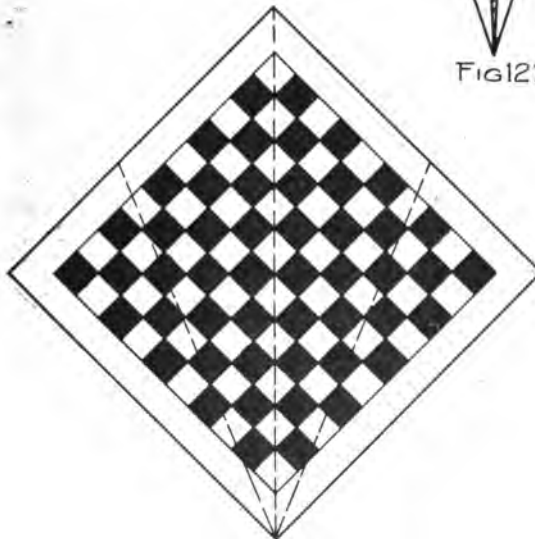


Fig122

Purpose:

To keep before the pupils the custom of hanging May baskets.

To give experience in combining tints of the same color, or combining contrasting colors.

To present number in the concrete.

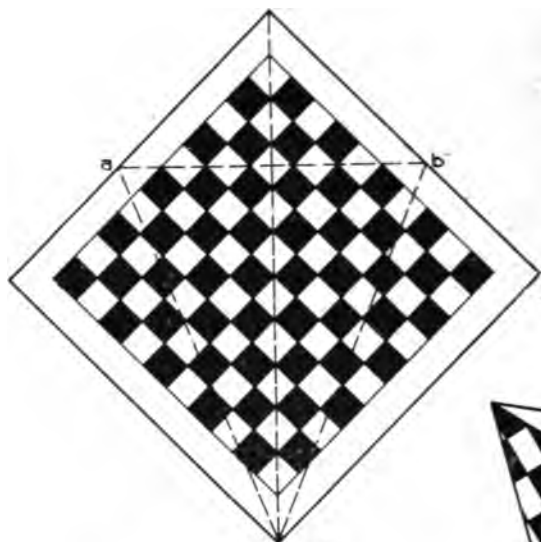


FIG 123

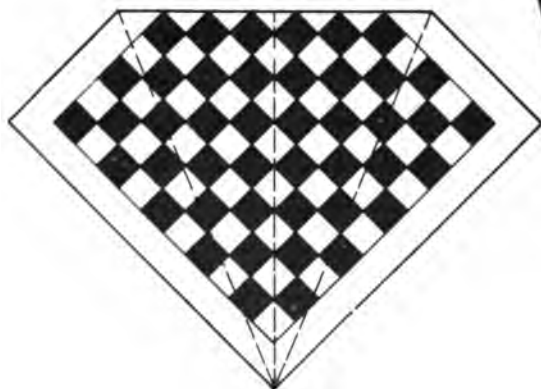


FIG 124



FIG 125

Presentation:

Present to the class a finished basket. Compare with the double woven basket suggested in previous outline, and the Easter basket woven of the strips. Take the finished basket apart, so that the pupils may see that it is constructed of two rectangles cut into strips, each strip being double and closed at the ends.

Construction of Basket

For convenience, the basket will be made of blue and white paper.

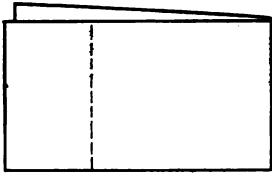


Fig 126

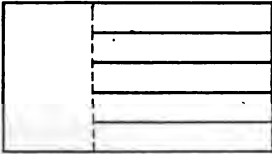


Fig 127

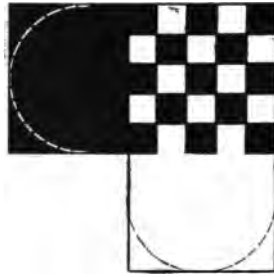


Fig 129



Fig 128

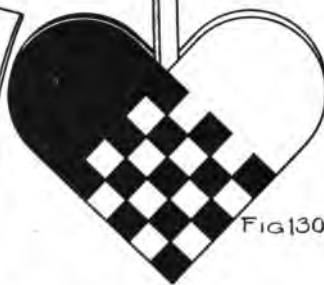


Fig 130

Cut a rectangle of each color $2\frac{1}{2} \times 9$ inches. Fold each so the short edges come together. Fig. 126. Draw a line $1\frac{1}{2}$ inch from the open short edges and parallel to same. Fig. 126. On the line just drawn place dots $\frac{1}{2}$ inch apart. Place dots $\frac{1}{2}$ inch apart on the closed edge just opposite and connect corresponding dots by straight lines. Fig. 127. Cut from closed edge along lines just drawn.

Place the two rectangles at right angles, as shown in Fig. 128. Begin to weave the first double strip of the white into the blue strips. Open the blue and let the white pass through double. Next, open the white and let the blue pass through the white double. Open the white and admit the blue. Continue until the end of the strip is reached.

Allow the woven strip to push along to make room for the second strip of the white, which is woven from the bottom. It starts out opening the white, allowing the blue to pass through. Continue until this strip is woven. Push the woven strips along to make room for each new one. Continue until all the white strips are woven. It then should look as shown in Fig. 129.

Round the corners of the rectangles and turn the basket as shown in Fig. 130. Add handle of paper.

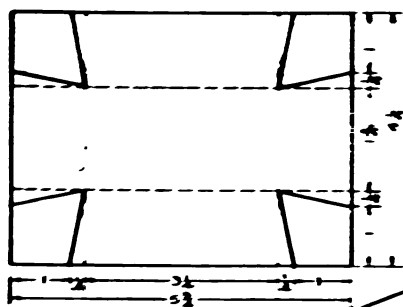


Fig 131

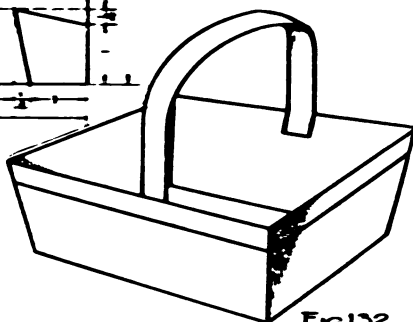


Fig 132

May Basket

Place upon the blackboard the pattern drawing of a May basket, as shown in Fig. 131. Make the drawing large enough so that it may easily be seen from any part of the room. The pupils understand that

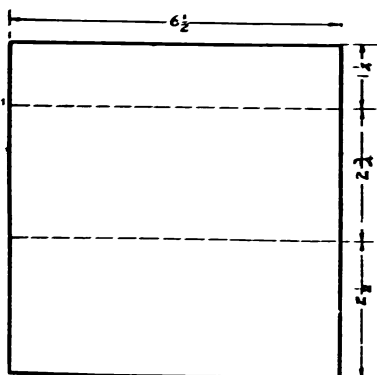


Fig 133



Fig 134

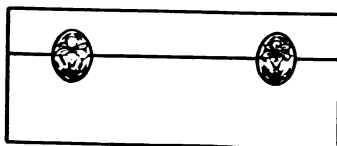


Fig 136



Fig. 135 Finished Easter Card. Open.

all dotted lines are to be folded and all continuous lines are cut. Fold and paste as shown in Fig. 132. It will be observed that the quarter-inch appears in th's basket. To avoid the quarter-inch have the pupils measure a half-inch and then divide the space approximately.

The band around the top is a strip of paper cut freehand about one-quarter inch wide.

Original Problem

Pass to each child a 9x12-inch piece of drawing, or tinted construction paper, asking each to construct a May basket.

Easter Cards

Most attractive Easter cards may be made by combining two rectangles of different sizes and colors. On the smaller rectangle hektograph an Easter sentiment. A small Easter sticker in the right place adds to the card.

Fig. 133 shows the dimensions used in the Easter card folder. Fig. 134 shows the arrangement of the rectangles and Fig. 135 shows the card placed within the folder, while Fig. 136 shows the closed folder.

Word Building Game

Fig. 137 shows the exercise as it appears on the manila document paper.

Cut on the continuous lines the same as in exercises mentioned

Initial Letters										Family Names	
c	t	sh	gr	dr							ape
b	c	f	l	m	r	s	t	sh			ake
c	d	f	g	l	n	s	t	sh	bl	fl	ame
f	m	w	bl	sh	sp	gr					ade
f	h	m	n	t	s	p	w				all
b	h	j	l	n	p	s	r	t	wh		ack
b	h	l	s	st							and
b	c	f	h	m	p	r	s	t	th		at
b	f	g	h	l	n	r	s	t			ag
b	f	g	h	l	m	s	gl				ad
b	h	m	n	s	wh	ch					eat
h	l	r	ch								cap
d	f	h	n	s	w	gr					eed
s	w	qu									cen
d	g	f	h	n	t	sp	cl				ear

Fig 137

in previous outlines. When cut it will be found that the ending at right of sheet will all be left on one strip. Each letter will be found separate on a half-inch square of manila document.

To Play the Game

The long strip on which the endings are found is placed in a vertical position on the desk. Each letter is picked up and placed before the proper ending. Encourage the pupils to place each letter as it is picked up. They are so often apt to begin with the first of the list and work down to the end. A great deal of time is lost in this way. The idea is to place each letter, whether before the first or last ending, just so it is in the right place.

If it is thought desirable the initial letters for each ending may at first be left in one strip and placed before the endings. In this way the pupils become familiar with the work.

Later cut on the dividing lines and proceed as above mentioned.

Envelope for Game

From a 6x9-inch piece of construction paper fold an envelope long enough to hold the long strip on which the endings are printed.

Material for April:

Cuttings—Use scraps that have accumulated.

Spelling Book { 3 pkgs. language or number paper.
1 pkg. 6x9-inch construction paper.
Carpet warp. Darning needles.

May Basket { 1 pkg. 9x12-inch construction paper.

Single Weave { 1 pkg. 6x9-inch construction paper of another tint.

May Basket { 1 pkg. 6x9-inch construction paper (white).

Double Weave { 1 pkg. 6x9-inch construction paper (blue).

May Basket—1 pkg. 6x9-inch construction paper.

Easter Cards { Rectangular pieces of construction paper.
50 Easter sentiments.

Folder for Easter Card—1 pkg. 9x12-inch construction paper.

Word Building Card—50.

Envelope for Word Building Card—1 pkg. 6x9-inch construction paper.

MAY AND JUNE

Cutting and Tearing

This is the time of the year when the girls are playing jackstones and jumping rope. The boys are interested in marbles.

Have the pupils cut and tear figures to show pupils in various positions. Make the work a group problem, the outgrowth to be one large poster for the room.

Baseball and football make other interesting group problems.

Badges

Badges for Memorial Day may be constructed by following directions for badges made for Lincoln's and Washington's Birthdays (February outline).

Score Card

Purpose:

To give pupils a practical problem in very simple ruling.

To give concrete number.

Material:

1 pkg. of 6x9-inch manila drawing paper for the room.

Presentation:

All pupils are interested in playing games. This interest should be directed in such a way as to derive from it the greatest benefit to the child. Through his interest in games comes an unconscious training in keeping systematically a simple record on the score card of each member of his class. His desire to know various records involves a practical line of concrete number which paves the way to abstract number, which they must have as they advance in the grades.

Construction of Score Card

Pass to each pupil a piece of 6x9-inch manila drawing paper. Place the paper so the short edge is parallel with the front edge of the desk. On the long edges, and one-half inch from the back right and left corners, place dots. Connect these dots by a straight line. On the remainder of the long edges place dots one inch apart, and connect corresponding dots by straight lines.

On the short edges of the paper place dots one inch apart. Connect corresponding dots by straight lines.

In the horizontal row of rectangles at the top place the number (Roman) to indicate the number of row.

The horizontal row at the bottom will be used for totals made by the individual pupils of the various rows. The vertical rows of squares are for the individual records, as will be shown in the explanation of the game.

The Game—Bean Bag

To make the bag use ticking, canvas, a heavy unbleached muslin, or any other kind of cotton cloth sufficiently strong to hold the beans. Corn may be used.

Usually the "bean bag" game is tiresome because there are so few bags, thus making it necessary for pupils to wait while the bags are being collected. Have enough for at least six pupils. The game is also discouraging to pupils because the board as shown in Fig. 138 is used in the early part of the game. It is not an easy matter for the pupils to get the bag into the holes.

Make the game simple in the beginning.

First Game—Place the window pole across two chairs. Place a chalk mark on the floor showing where the thrower is to stand. If he can throw the bag across the pole give him credit for it.

Second Game—Place two chalk marks on the floor about ten feet apart. Have the thrower stand on one and throw the bag so it will go beyond the other.

Third Game—Make a circle of chalk on the floor. Place a mark about eight feet from the circle. Have the pupil stand on this mark and try to throw the bag in the circle. If he succeeds give him credit.

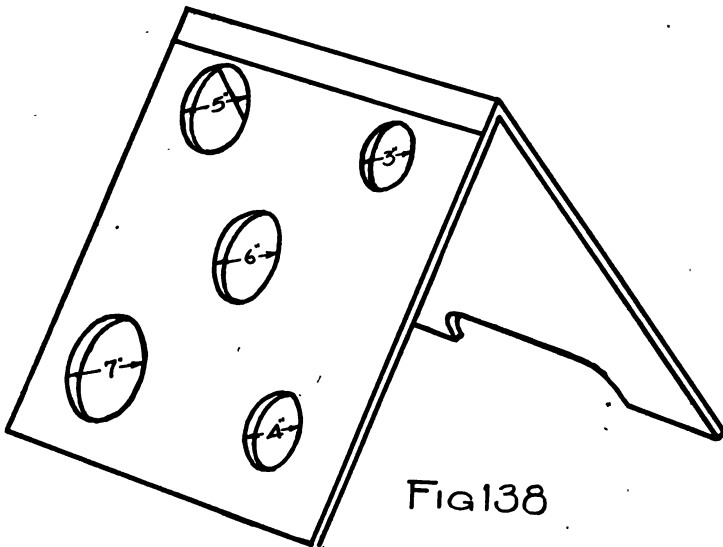
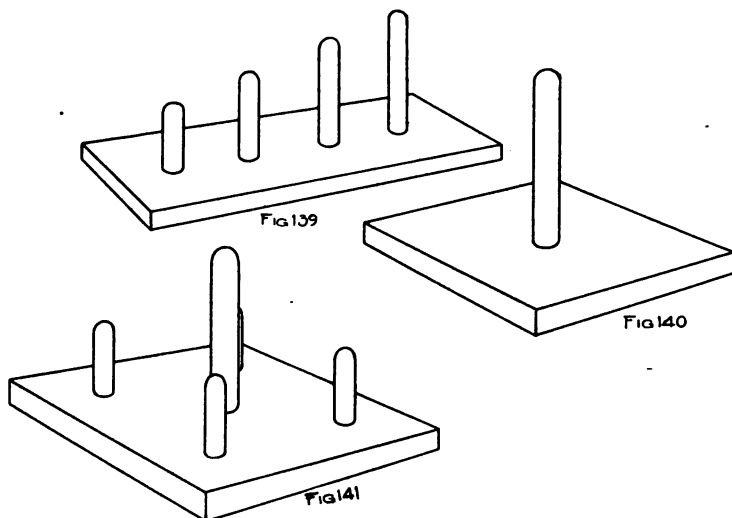


Fig 138



Fourth Game—Place several circles of different sizes on the floor, giving each a value. Have the pupils stand on the mark and aim to get the bag into some one of the circles.

Fifth Game—Place the waste basket on the floor. Have the pupils throw from a certain mark. The aim is to get the bag in the basket.

Sixth Game—Fig. 138 shows a drawing of a bean bag board. This may be made of two sheets of clothboard, one used for the board and the other for the support at the back. The support at the back may be held in place by pasting a strip of cloth across the top.

The larger boys will be glad to cut the holes as indicated in the drawing. It is just possible that the boys at work in the manual training would make a board of wood.

Use of Score Card

The purpose of the score card is to keep each child's record. Each square on the card represents a child's seat and into this square his score is to be placed.

If the teacher of the room is teaching the multiplication table of the 3's and the first game is being played, then the value of each bag thrown over the pole should be three. Each pupil should throw more than one bag. If the pupil sitting in the seat indicated by the square just beneath the Roman 1 throws three bags and each one is thrown over the pole he makes a score of nine and is placed in the square.

If the next pupil throws three bags and only two go over the pole

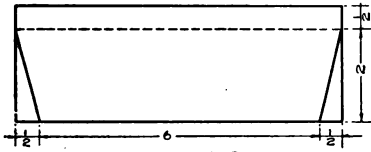


FIG 142

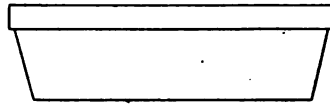


FIG 143

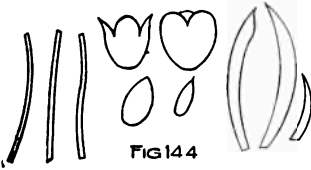


FIG 144

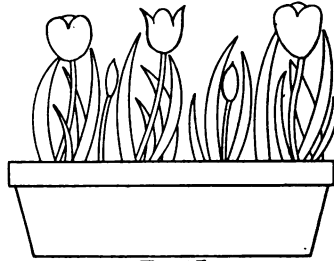


FIG 145

his score is six and is placed just under the nine in the square below. This is continued until each child has thrown three bags and the score card is filled. Each column is then added and the sum placed in the space left for the total.

In game four each circle may be given a different value and each pupil throws but one bag. If it is within the circle marked five and

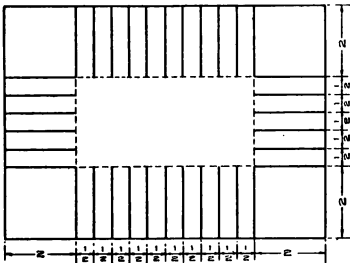


FIG 146

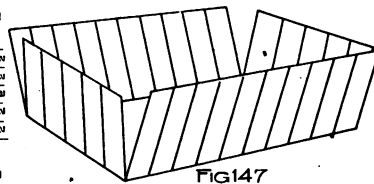


FIG 147

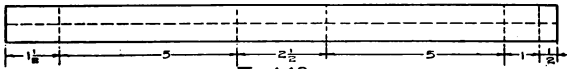


FIG 148



FIG 149

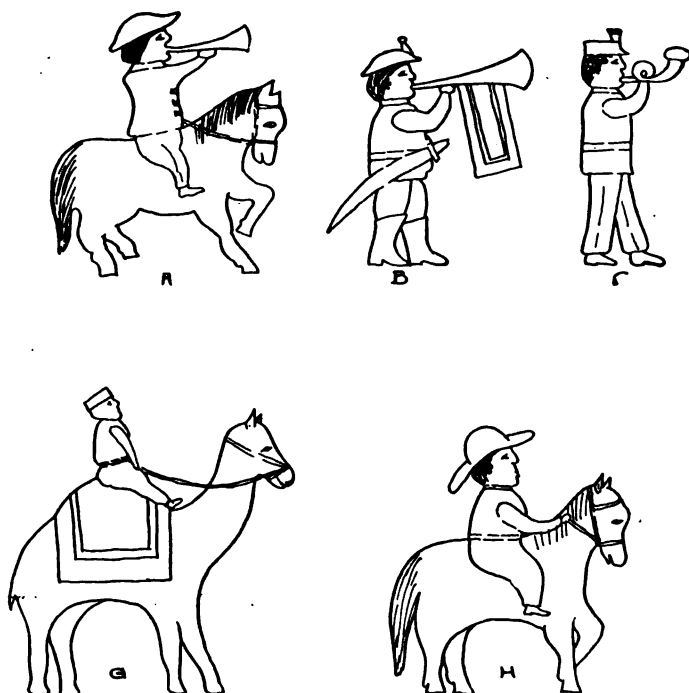


Fig. 150

the teacher is developing the table of 2's, then his score is five times two. Two is taken as many times as is indicated by the value of the circle. The smaller the circle the greater the value. This value may be any amount the teacher wishes to make it.

When the score card is filled have the pupils add each column.

What score did each row make?

Which row made the highest score?

How much more did this row make than any other one?

What score did all the rows make together?

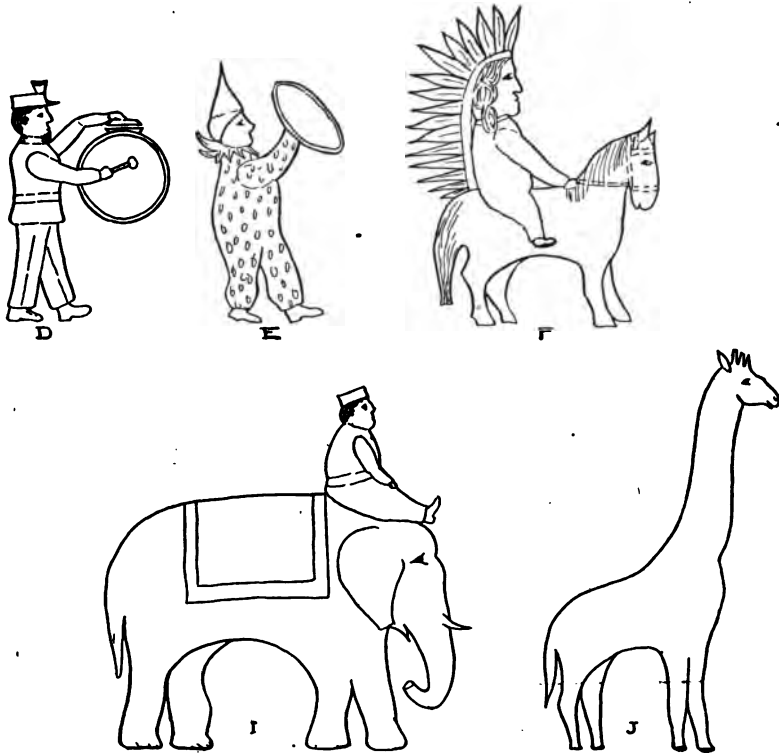
The teacher will find numerous other problems for the pupils to work out, using the score card as a basis.

A new score card is ruled for each game, thus making it possible to use the work during seat work time.

Ring Toss Game

Figs. 139, 140 and 141 show various boards which may be used in the ring toss.

The rings may be made of half-inch rope so spliced as not to interfere in any way.



Use the score card in keeping records, the same as in the games of the bean bag.

The Flower Pot

Draw and cut an oblong of brown construction paper 7 inches long and $2\frac{1}{2}$ inches high. Construct from this the flower pot as shown in Fig. 142. The half-inch at top is turned over as shown in Fig. 143.

The Stems, Leaves and Flowers

The stems of the flowers shown in Fig. 144 may be cut of a light green paper:

Cut the leaves of a dark green paper by folding a rectangle lengthwise. Fig. 144.

From scraps of colored paper cut and paste the flowers to the stems, as shown in Fig. 145. Any kind of flowers may be selected, thus securing a great variety from any one class of pupils.

Fruit Basket

Fig. 146 shows the pattern drawing for a very simple yet effective fruit basket. It is made of bogus bristol board or any other stiff paper.

Fig. 147 shows the sides turned upward, cut into half-inch strips. Half-inch strips having a length equal to the perimeter of the basket are cut and woven around the basket as shown in Fig. 149.

Fig. 148 shows the strip for encircling the top edge of the basket. It is creased lengthwise down the center, one-half being pasted to the inside of the basket and the other to the outside. The strip is cut so that the overlapping comes at one end.

A similar basket may be made by taking ten strips one-half inch wide and $4\frac{1}{2}$ inches long and 5 strips one-half inch wide and 9 inches long. The five 9-inch strips are laid horizontally on the desk and the $4\frac{1}{2}$ -inch strips are woven across them.

The cross strips are pushed down so as to form the bottom of the basket. The two-inch ends of the strips are now turned upward and the remainder of the basket is completed the same as in the first basket described.

The Circus Parade

There is no problem in the second grade that arouses more enthusiasm than that of the circus parade. It is a group problem in which every pupil of the class may be represented.

Fig. 150 shows a number of cuttings just as they were cut by second-grade pupils. A shows a trumpeter, B, C, and D members of the band, E the clown, F the Indian, G the camel, H the cowboy, I



Fig151

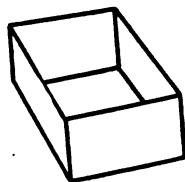


Fig152

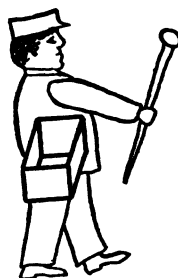


Fig153

the elephant, and J the giraffe. All the pupils of the room cut each animal. The one cutting the best uses his as a pattern to cut all others just like it. There are always two or more of a kind in the parade. In order to make the animals stand, they must be pasted to a rectangular support as shown in Fig. 152. This support is made of a strip of paper as shown in Fig. 151. One end of the support is pasted to one side of the cutting, as shown in Fig. 153. The other cutting, which is exactly the same, is pasted to the other end of the support. This makes it possible for the two cuttings to stand. In this way two elephants may be held together, two camels, two lions, etc.

The Cages

The cages may be made of the 9x12-inch tinted construction paper. The construction should be as simple as possible. The folding may be made as shown in Fig. 154. One-half inch is folded over along the left edge, as shown in Fig. 154. This is left folded while the remainder of the sheet is folded into sixteen divisions. Each side is folded double and cut as shown in Fig. 154. Fig. 155 shows the cage folded into shape and pasted. Fig. 156 shows the wheels added to the cage, the driver and horses in their proper places. Sometimes three or four pairs of horses are attached to one cage. Fig. 157 shows a fancy cutting which is pasted around the top of the cage as

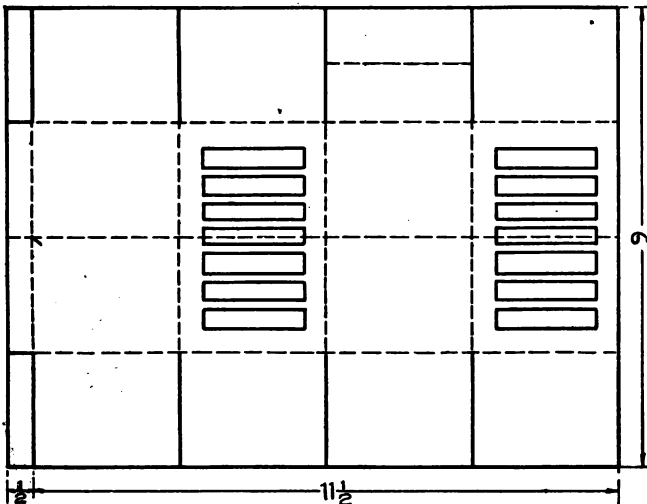
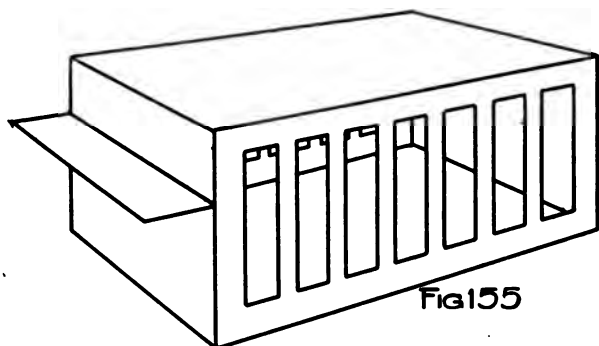
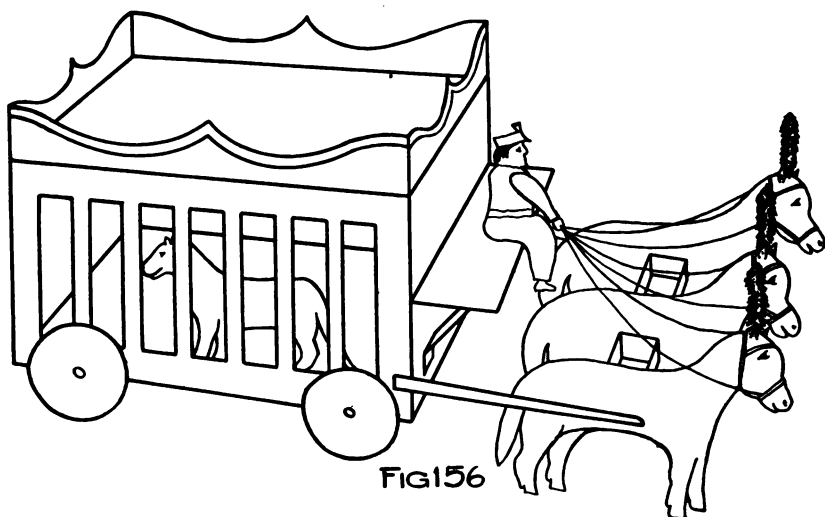


FIG 154



shown in Fig. 156. One can hardly realize what a wonderfully interesting group problem this is. The wagons and cages may be made more interesting by pasting colored pictures to the ends and sides. The wagons and cages may be made of different colors. Do not forget the band wagon with the musicians, the chariot, and the wonderful calliope which are always a part of the parade. The animals may be colored with colored crayons.



In the first grade the work was all centered on the flat cuttings. In this grade the three dimensions add a great deal to the interest.

Materials for May and June:

Cutting and Tearing—Use scraps, as far as possible.

Badges—Red, white and blue paper, already in stock.

Score Cards—50 pieces of manila document $4\frac{1}{2} \times 6$ inches.

Boards { Ring toss, to be made in manual training.
 { Bean Bag.

Flower Pot { 1 pkg. 6x9-inch construction paper.
 { Scraps of various colors for flowers.

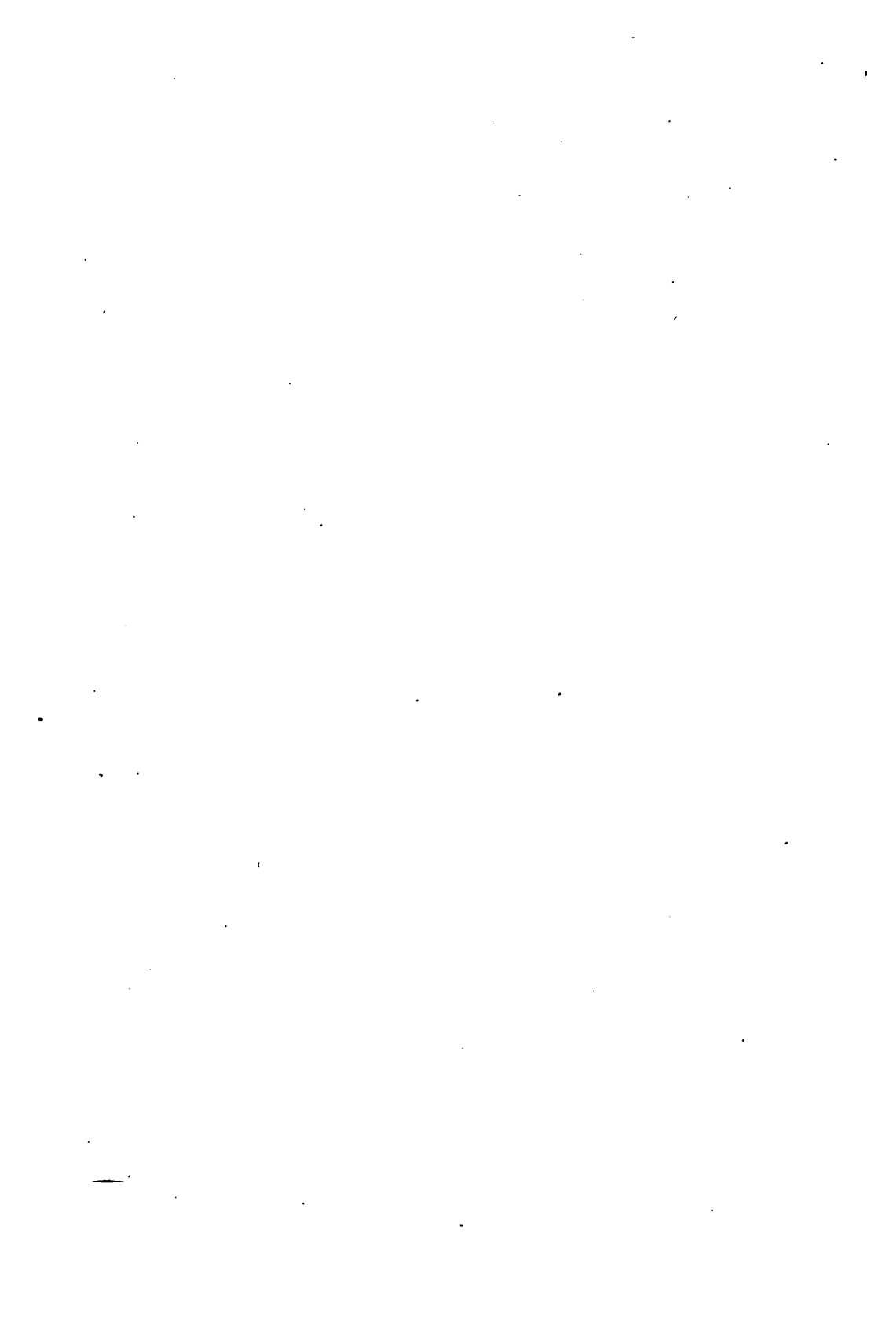
Fruit Basket—Bogus Bristol Board, cut by the teacher to size.

Fruit Basket Made of Strips—Bogus bristol board strips.

Circus Parade { 2 pkgs. 9x12-inch construction paper.
 { 1 box Spear Head collar buttons.



Construction Work
for the
Third Grade



SEPTEMBER

With a small amount of money to expend, it becomes necessary to plan for the construction work as economically as possible and, at the same time, consider the value of the exercise to the child. There is great danger of the teacher becoming over-ambitious. Too much is expected of young children, and in order to make a good showing the teacher unconsciously does much work the children should do.

Be content with a child's efforts, and choose such work as children can do, and do well. Teachers are often heard to say at the close of a lesson, "It is good for a third grade," or "It is good for a second grade." Problems given to children should not be so difficult but what it is reasonable to expect that they shall be well done. "It is good enough" will not do when the exercise may be one better suited for a sixth grade rather than a third.

Do not be deceived by the fancy forms that are often turned out by our pupils carrying but little value with them.

Each exercise given to the pupil should be so planned that its construction will aid in the construction of some other exercise a little more difficult. Ruler work carefully and accurately done, aids greatly in securing careful and accurate work all through the grades.

Score Cards

Purpose:

To teach the child to keep a simple record of each member of the class.

Gives him practical use of the multiplication tables.

Gives opportunity to do neatly and carefully half-inch measuring.

To submerge his number and construction into one subject number.

The score card is really a plat of the room, showing the location of each child's desk. It thus becomes a lesson in early map drawing, as well as construction.

Material:

50 pieces of drawing paper or manila document, 4x5 inches.

Presentation:

The pupils have just returned from a long vacation. They have already played games much of their play time. An opportunity is given in this exercise to teach them how to keep systematically the score made by each child taking part in the game.

Have the pupils assist in determining the size the score card

should be. The size is determined by the number of rows of seats in the room, and the number of pupils in each row. If there are six rows of seats in the room, and each row has a space $\frac{1}{2}$ inch wide, how many inches wide must the card be to show all the rows?

If there are seven pupils in each row, and $\frac{1}{2}$ inch is allowed for each pupil, how long must the score card be?

The rows must be numbered and there must be a place for the total score made by each row. If $\frac{1}{2}$ inch is allowed for the number of the row, and $\frac{1}{2}$ inch for the total, how long must the card be?

After getting from the pupils the desired data, have them measure and cut from manila drawing paper or manila document, a rectangle $3 \times 4\frac{1}{2}$ inches. The width and length are determined by the number of rows of seats and the number of pupils in each row. Divide the rectangle into half-inch squares as shown in Fig. 1.

I	II	III	IV	V	VI

Fig 1

I	II	III	IV	V	VI
15	18	9	12	21	30
24	0	21	24	36	0
9	6	30	27	30	0
0	36	0	6	12	21
12	21	33	0	6	15
6	0	12	3	9	24
3	9	15	6	12	12
69	90	120	78	126	102

Fig 2

Envelope

Purpose:

To hold the score card.

Provides excellent opportunity for accurate measuring.

To begin mechanical drawing.

Material:

50 pieces of 6x9-inch manila drawing or tinted construction paper.

Presentation:

The interest in the construction of the envelope has already been created through the completion of the score card. The class might be

9	7	2	11
5	1	6	3
12	8	4	10

Fig 3

questioned in regard to necessary dimensions and color. Why is a dark color for this particular envelope better than a light colored paper?

Construction of Envelope:

From the 6x9-inch piece of paper cut a rectangle 6x7½ inches.

Learning to Read a Pattern Drawing

Pupils should learn to read a pattern drawing when placed on the blackboard. They should be made to feel that a pattern drawing is only a mode of expression. It is a language understood by those who have learned to read it.

Pattern drawings and mechanical drawings are thought by many to be the same. This is not true. The pattern drawing gives but two dimensions, length and breadth; while in the mechanical drawing the third dimension, thickness, enters.

In order to interpret a pattern drawing, have the pupil understand that two little dots (") placed above and to the right of a figure indicate inches. All dotted lines (.....) indicate folding, and all continuous lines (—) indicate places to be cut. Understanding this, the pupil will be able to interpret the pattern drawing shown. Fig. 4 gives all the dimensions necessary for the construction of the envelope for score card.

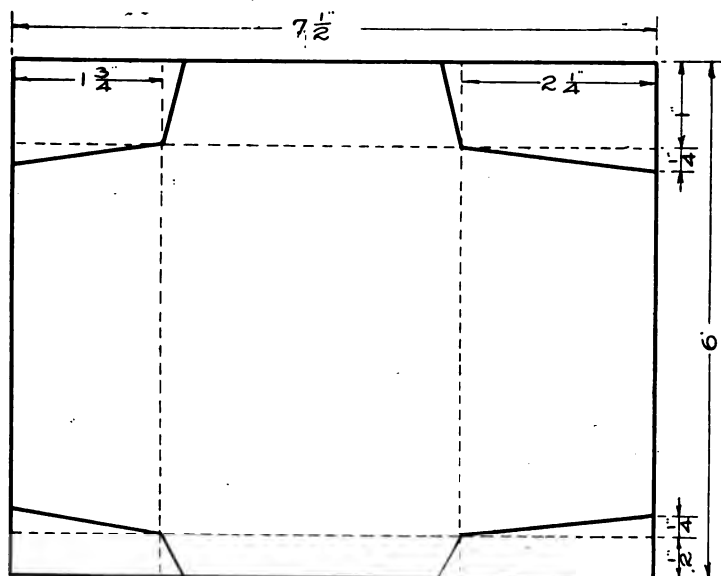


Fig. 4

With the use of Waldcraft sticks and dyes or paper cutting add some simple design.

The Game

Draw upon the blackboard a rectangle four feet long and three feet wide. Divide rectangle into foot squares. In each square place a figure of the multiplication table, from 1 to 12. Fig. 3.

About 10 or 12 feet in front of the drawing, place a chalk mark on the floor. Provide a tennis ball and a damp sponge. Dampen the ball on the sponge and allow the pupil in the back seat of row 1, with his toes on the chalk mark, to throw the ball. If it strikes within the square containing 5, that pupil's score is fifteen, and is recorded by each pupil in the room in the half-inch square corresponding to his seat. In this case, multiply by three each time the ball strikes. If a drill in the multiplication of the fours is desired, multiply by four each time the ball strikes. Any multiplier may be chosen from 1 to 12.

The object in dampening the ball is to leave a little damp spot showing where the ball strikes. The game is played a little quicker if two balls are provided. When each child in the room has made a score, the remainder of the lesson may be used for seat work.

Figure 2 shows the score card when filled by the pupils.

Place upon the board the following problems concerning the score card:

1. What score did each row make? (Fig. 2.)
2. Which row made the highest score?
3. Which row made the lowest score?
4. How much more did row VI make than row I?
Make other comparisons.
5. Find the average score of row 3.
6. Find the average score of row 4.
7. What score did the whole room make?
8. What is the average score for the room?

Spelling Blank

Purpose:

To provide a way of keeping each day's spelling lesson.
To create a pride and interest in the child to do his work well.

Material:

250 sheets of 6x9-inch number paper or the $5\frac{1}{2}$ x8 $\frac{1}{2}$ -inch unruled language paper.
50 sheets of 6x9-inch tinted construction paper.
50 pieces of carpet warp 15 inches long.
50 darning needles. Paste.

Presentation:

After the long vacation the children will be interested in preparing and constructing the various exercises that will aid in keeping systematically the various lines of academic work. The spelling blank is especially interesting. Discuss with the children the construction of the book.

What is a good shape for a spelling blank? Why?

Name several good colors. Why is each good?

What materials would you use in making such a book?

(If the cover is to be decorated) Where would you place the decoration?

What sort of decoration would you use?

Fig. 5 shows several simply designed covers which may be used for spelling book covers. If the teachers will at first hold to combining tints of the same color there will be little or no danger of getting away from harmonious coloring. If a dark brown is used for the cover use tan or fawn for the design. If gray is used for the cover use blues for the design. As the pupils advance, harmonious contrasting colors may be used.

Construction of Book**First Lesson:**

Pass to each child five sheets of the paper above mentioned. Pass each child one sheet of 6x9-inch tinted construction paper.

What is the length of each sheet? What is the width?

Fold each sheet down the center lengthwise. How wide is each half? Place one folded sheet within the other until all have been placed. Place folded cover on the outside.

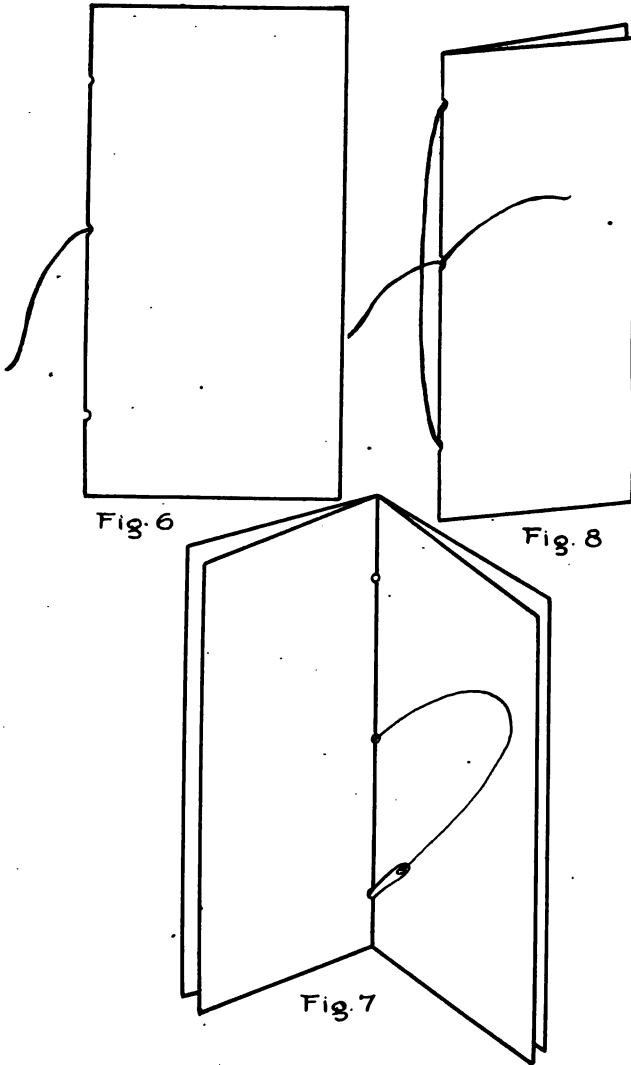


Fig. 5 Book Covers with Applied Design.

To Sew the Book

At the center of the crease, down the back, place a dot. Three inches above and below this dot place other dots. Force the darning needle through the sheets at each dot.

Thread the needle with a suitable color of carpet warp, and begin



to sew by bringing the needle through the center hole from the outside of the book. The needle and the thread are now on the inside. Leave a generous end on the outside. Fig. 6. Next, bring the needle through the hole just below the center. Fig. 7. The needle is now on the outside. Take one long stitch (Fig. 8) from the lower hole to the hole above the center, passing it to the inside. The needle is next brought through the center hole for a second time. There are now two ends on the long stitch. Tie these two ends in a hard knot over the long stitch. The ends may also be tied in a bow knot. This will add just a little to the decoration of the book.

Second Lesson:

Pasting the Cover

Turn the cover of the book back. Slip a piece of newspaper under the first page of the book and apply paste over the entire page. The newspaper will prevent the paste from getting on the other pages.

Material for September:

Score Card—50 pieces of manila document, 4x6 inches.

Envelope for { 1 pkg. 6x9-inch construction paper.

Score Card { Walcraft sticks.

Score Card { Walcraft pads.

{ 3 pkgs. manila or language paper.

{ 1 pkg. 6x9-inch construction paper.

Spelling Blank { 2 pkgs. darning needles.

{ Carpet warp, one spool.

{ Sticks and pads.

OCTOBER

Cutting

Cutting from memory and imagination, as it relates to the academic work.

Cutting in parts and then assembling may be very successfully and effectively carried on in the third grade.

A small amount of cutting from objects may be introduced in this grade.

Cutting of cats, bats, witches, and pumpkins for Hallowe'en decorations.

Cuttings to decorate lanterns.

Purpose:

To cultivate the imagination.

To work for skill in a combination of hand, eye, and brain exercises.

To encourage originality.

To use cutting as a mode of expression.

Lantern

If the teacher so desires, pupils of the third grade, in addition to the lantern planned, may construct lanterns similar to those constructed in the first and second grades, measuring each part necessary for their construction. If this is done, pupils should work without direction. Lanterns of the lower grades may be shown the pupils, allowing them to get what they can from observation. Pass the necessary material and let them construct.

Purpose:

To create a desire in the pupils to do good work through their interest in a pleasing exercise to be used in schoolroom decoration.

To give opportunity to combine colors.

To make number work practical through construction.

Material:

Tinted construction paper 9x12 inches.

Tools:

Ruler and scissors.

Presentation:

Third grade pupils have not outgrown the desire to decorate the schoolroom for special days.

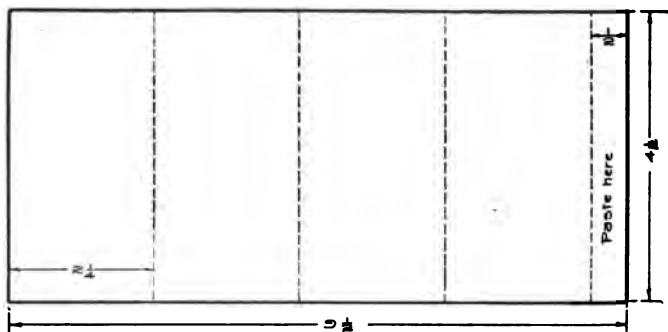


Fig 9

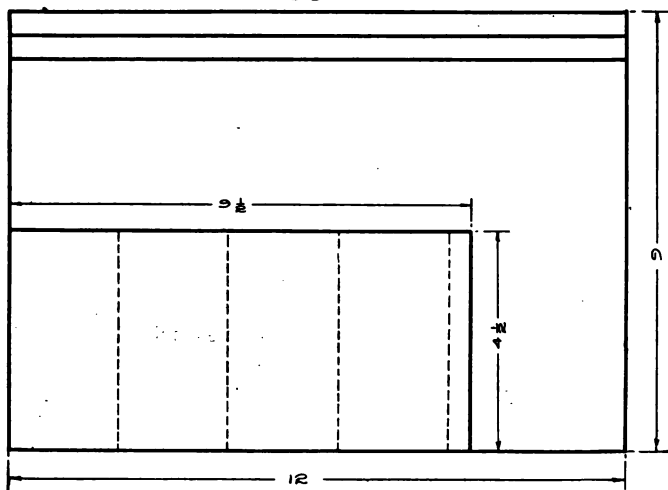


Fig 10

Present to the class a finished lantern constructed by the teacher.

Pass to each pupil a sheet of 9x12-inch tinted construction paper.

It requires a rectangle of $9\frac{1}{2}$ x $4\frac{1}{2}$ inches to construct the lantern.

Place the drawing (Fig. 9) on the blackboard and permit the pupils, after a few questions like the following, to begin work without further direction:

How long is the piece of paper on the desk? How wide?

What is the length of the drawing of the lantern? How wide?

From what part of the sheet should the lantern be cut?

Teach the pupils to use materials as economically as possible.

The rectangle required may be cut from one corner of the sheet of paper, as shown in Fig. 10, leaving a strip $2\frac{1}{2}$ inches wide at the end of the sheet.

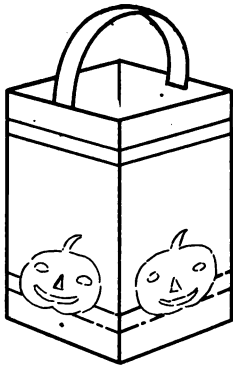


Fig 11

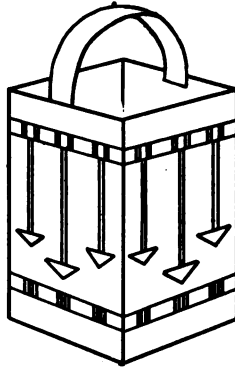


Fig 12

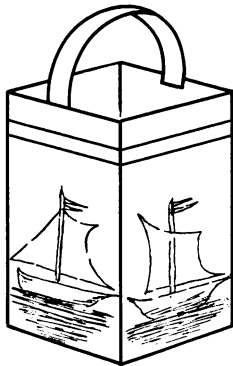


Fig 13

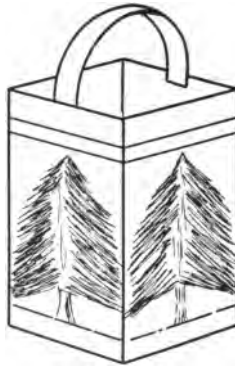


Fig 14

After cutting the $4\frac{1}{2} \times 9\frac{1}{2}$ -inch rectangle from the sheet, have each pupil exchange the remainder of his sheet with some other pupil having another tint of the same color, or a harmonious contrasting color.

From this piece cut two strips $\frac{1}{4} \times 12$ inches, and use as decorative bands pasted around the lantern about $\frac{3}{4}$ inch from upper and lower edges. (Figs. 11, 12, 13, 14.) The end piece may be used for other simple decoration.

The decoration applied to Fig. 11 is largely governed by the time of the year the lantern is constructed. If in October, the Jack-o'-lantern will do; if in November, the Mayflower; and if in December, the pine tree.

Very interesting conventional designs may be made by using the

stick printing. Small sticks, circular, square, rectangular and triangular, may be used as block prints.

Word Book

Purpose:

To have the pupils become familiar, so far as they are able to comprehend, with simple book making.

To submerge construction, drawing, and numbers to one subject—construction.

To construct that for which there is an immediate need.

To lead the pupils into systematic ways of keeping new words.

Material:

Jute board 6x4 $\frac{1}{2}$ inches.

9x12-inch white unruled language paper, or tinted construction paper.

Construction paper, 6x4 $\frac{1}{2}$ inches.

Bookbinder's cloth, 6x2 $\frac{1}{2}$ inches.

Needles.

Super, 1x5 inches.

Presentation:

By the time pupils reach the third grade, they are capable of fully appreciating some systematic way of keeping lists of new words. The way for the construction of a word book has been well paved. Some of the points the teacher and the class should discuss before beginning to construct are as follows:

The arrangement of the work on a page.

How many columns?

The size of pages?

How shall words be arranged regarding initial letters?

What are some of the advantages of arranging the words alphabetically?

How may the pages be indexed so certain words may easily be found?

What colors would be good for the outside cover? Why?

Having decided upon the above, the class is ready to begin the construction of the book.

Construction: First Lesson.

Each child is provided with two pieces of jute board 6x4 $\frac{1}{2}$ inches, and a strip of bookbinder's cloth 6x3 inches. Draw a dotted line through the center of the bookbinder's cloth vertically. This will necessitate finding $\frac{1}{2}$ of 3 inches.

At each side draw two continuous lines parallel with the dotted

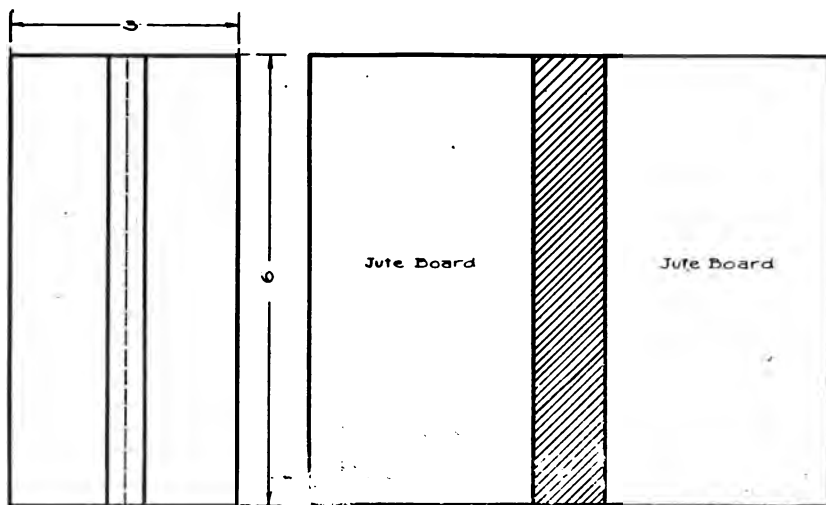


FIG 15

FIG 16

line just drawn, and $\frac{1}{8}$ inch from it. (Fig. 15.) This rules off a quarter-inch strip through the center of the bookbinder's cloth.

Apply paste to the entire strip and lay the jute board covers on the strip so the edges just meet the lead pencil lines, leaving $\frac{1}{4}$ inch between the covers. (Fig. 16.)

Before beginning to paste, encourage the pupils to bring in newspapers. These may be torn in such a way that the pupils always have clean pieces of paper on which to paste.

After smoothing the pasted bookbinder's cloth, the covers are ready to be put into the book press.

Place a small strip of oiled paper down the center of each cover to prevent the one on top from sticking to the one below.

Second Lesson:

The bookbinder's cloth is now dry, and the covers may be handled without danger of pulling apart.

From the marble or tinted construction paper, cut two pieces each $3\frac{1}{2} \times 6$ inches. Apply paste to the paper, and place upon the jute board covers, allowing the paper to overlap from $\frac{1}{8}$ to $\frac{1}{4}$ inch of the bookbinder's cloth down the back. Fig. 17. (The dotted lines show the part of the binder's cloth under the paper.)

The cover paper may extend beyond the edges of the jute board covers. The surplus may be trimmed off after the paste has dried.

The book is now ready to be put into the press for a second time.

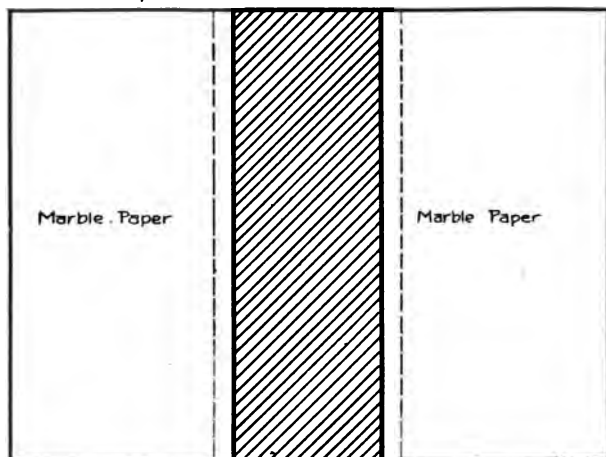


Fig 17

Third Lesson:

In this lesson the white sheets should be folded into quarters. Fold first the short edges together. Fold again the open edges together. Each sheet now measures $4\frac{1}{2} \times 6$ inches.

Fold each of the white sheets in the same way. After the sheet is folded it is called a section. Place sections, one within the other, and with the linen thread, sew together in the following manner as shown in Fig. 18.

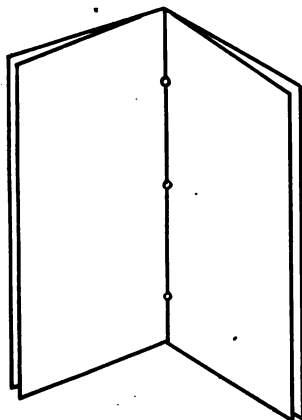


Fig 18

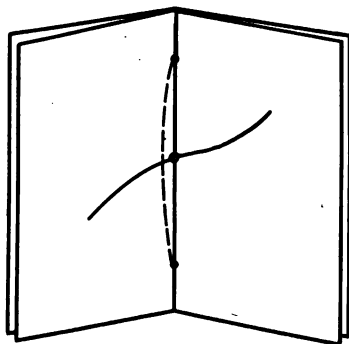


Fig 19

Place a dot at the center of the crease at back. Two inches above and below this center dot place other dots. (Fig. 18.) Before beginning to sew, thrust the needle through the sheets at each dot.

Apply paste to strip of super and paste down the back of white sheets.

Thread the needle with the linen thread and thrust it through the center hole from the inside of the sheet. Draw all but about two inches of the thread to the outside. (Fig. 19.)

Thrust the needle from the outside through the hole above the center, and draw the thread to the inside. Next, thrust the needle from the inside through the hole below the center hole to the outside. This makes a long stitch down the center of the back on the inside (shown by dotted line). (Fig. 19.)

The needle is now on the outside (Fig. 19). The needle is now thrust through the center hole from the outside, coming through in such a way as to leave the first end at one side of the long stitch, and the needle and remainder of thread at the other side of the long stitch. With the first end and the thread in the needle, tie a hard knot over the long stitch. Cut thread, leaving ends about $\frac{1}{4}$ inch long.

Do not delay the construction of this book if there is no super, as the book may be made without it. Super adds some to the strength of the book, as a strip 1x5 inches may be pasted down the back before placing the book into the covers.

Fourth Lesson:

The book covers may now be removed from the press, and the leaves may be placed in the covers. The first and the last pages of the book become the linings.

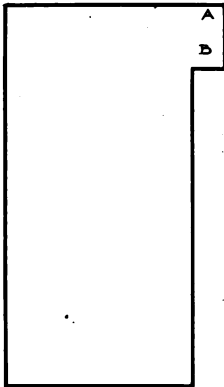


Fig 20

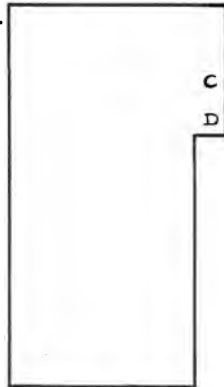


Fig 21

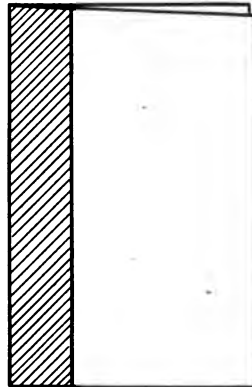


Fig 22

Slip a piece of newspaper under the first page, and apply paste to the page. The newspaper prevents paste from getting on the under pages.

Place the book within the covers, forcing it well to the back. Lay cover on pasted page. Slip a piece of newspaper under last page of book and paste same as the first. The book is now pasted within the covers. Books are now placed in the press, being careful to use some means of preventing the covers from sticking to each other. Slip several thicknesses of newspaper under the inside of each cover to prevent the pages of the book from absorbing moisture from the paste.

It will be found that the edges are rather irregular, and need to be trimmed. This is best done in a large paper cutter such as may be found in many schools, or in a print shop. If it is not possible to have the books trimmed by machine, allow each pupil to trim his own.

Fifth Lesson:

If the teacher so desires the book may now be indexed. Allow one page for two letters. The pages are now 6 inches long. Cut from the outer edge of the first page a strip $\frac{1}{2}$ inch wide and 5 inches long. This allows one inch to remain. (Fig. 20.) On this 1 inch the letters "a" and "b" may be placed. From your second page, and along the outer edge, cut a strip $\frac{1}{2}$ inch wide and 4 inches long; and on this remaining strip place the letters "c" and "d" in such a way that they are just below "a" and "b" on the first page. (Fig. 21.)

From the next page cut a strip $\frac{1}{2}$ inch wide and 3 inches long, placing on this page "e" and "f," just below "c" and "d." Continue in this way until the last page is reached.

Material for October:

Lanterns—1 pkg. 9x12-inch construction paper.

	{	50 pieces of jute board, 6x4 $\frac{3}{8}$ inches.
		3 pkgs. 9x12-inch unruled language paper or tinted construction paper.
Word Book		1 pkg. 6x9-inch construction paper.
		$\frac{1}{2}$ yard bookbinder's cloth.
		2 pkgs. No. 16 carpet needles.
	$\frac{1}{2}$ yard super.	
		Thread.

NOVEMBER

Cutting and Tearing

This month is as rich for the third grade in freehand cutting and tearing as for the first and second grades.

Across the top of the front blackboard place a piece of wrapping paper or ingrain wall paper. Use this as a foundation on which to mount the cuttings to be used in building up a Thanksgiving poster. A group problem of this sort makes it possible for each member of the class to be represented, for the larger cuttings may be placed in the foreground, while the smaller ones may appear in the background. Emphasize pine trees. These may be used in a New England forest. At least half of the strip of paper may be used as land, the other half as water. Cut Indians, wigwams, canoes, Mayflower, Pilgrims, Plymouth Rock, animals, and anything else which may seem of interest.

Soldier Cap and Puritan Bonnet

If the teacher so desires, it might be well to make use of some of the work as outlined for the second grade for this month. Children of the third grade enjoy being Indians and Pilgrims, and will thoroughly appreciate the simple construction suggested for the second grade.

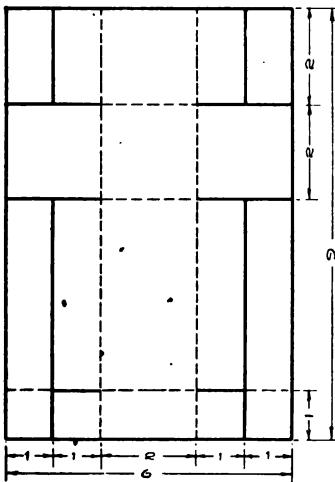


FIG 23

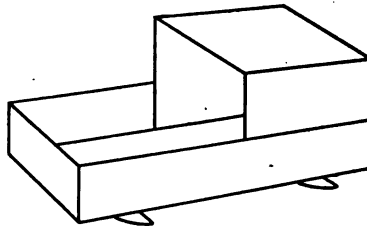


FIG 24

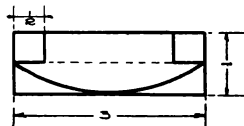


FIG 25

Puritan Cradle

Purpose:

To aid in getting the pupils interested in Colonial history.

To give practice in reading and working from a pattern drawing placed on the blackboard.

To make something to be given to some younger child.

Material:

One piece of tinted construction paper 9x12 inches.

Presentation:

Present to the class a finished cradle. Fig. 24. After discussing its construction place before the pupils a pattern drawing (Fig. 23) from which they should work.

How long is the drawing? How wide?

How much longer is it than it is wide?

What is the length of one long edge and one short edge put together?

What is the distance half way around the pattern drawing?

What is the distance all around (perimeter)?

Fig. 25 shows drawing of rocker.

Multiplication Game

This game, while listed as one problem, is really made up of four problems—the number board, envelope to hold number board, board for multiplication table, and the small envelope to hold the $\frac{3}{4}$ -inch squares.

1	2	3	4	5	6	7	8	9	10	11	12
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

FIG26

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

FIG27

Purpose:

To teach the pupils to do neatly and accurately a simple ruling exercise which leads to more accurate work in the mechanical drawing of the higher grades.

To give the pupils a practical lesson in construction, emphasizing the number element.

To provide a way for a drill in the multiplication tables to be used as seat work.

Material:

- 1 piece of 12x12-inch document.
- 1 piece 9x9-inch manila document.
- 1 piece bookbinder's cloth 1x11 inches.

Presentation:

The child should know the multiplication table perfectly, and this game is an excellent help in mastering it. The making of it furnishes the best sort of seat work.

If at this time the pupils are not familiar with all the multiplication tables, use the game only as far as the pupils are able.

The 12-inch square of manila board is ruled into 1-inch squares. This is done by placing dots one inch apart along the right and left edges, and then connecting the corresponding dots by straight lines. Dots are then placed on the front and back edges and the corresponding dots connected by straight lines. Fig. 26.

In the upper horizontal row of squares, write the figures from 1 to 12. In the vertical rows of squares write the figures 1 to 12, using the upper left square for each 1. Fig. 26. In order to have this a convenient size to keep in the desk, cut the square into halves, and paste together with a piece of bookbinder's cloth. It can then be folded to a 6x12-inch rectangle.

Multiplication Table

Rule the 9-inch square into $\frac{3}{4}$ -inch squares by placing dots $\frac{3}{4}$ -inch apart on the outer edges and connecting corresponding dots by straight lines the same as in Fig. 26.

Write the multiplication in this form, using the 144 squares. Fig. 27.

In order to familiarize the children with the table before using it for silent work, read it by horizontal rows and by vertical rows. Compare the first row, either vertical or horizontal, with the other rows, and the other rows with the first row; e. g.; the sixth with the first would give 6 is 6 times 1; 12 is 6 times 2; 18 is 6 times 3; etc. Or, 6 times 1 is 6; 6 times 2 is 12; 6 times 3 is 18.

Comparing the second with the fourth would give this: 2 is

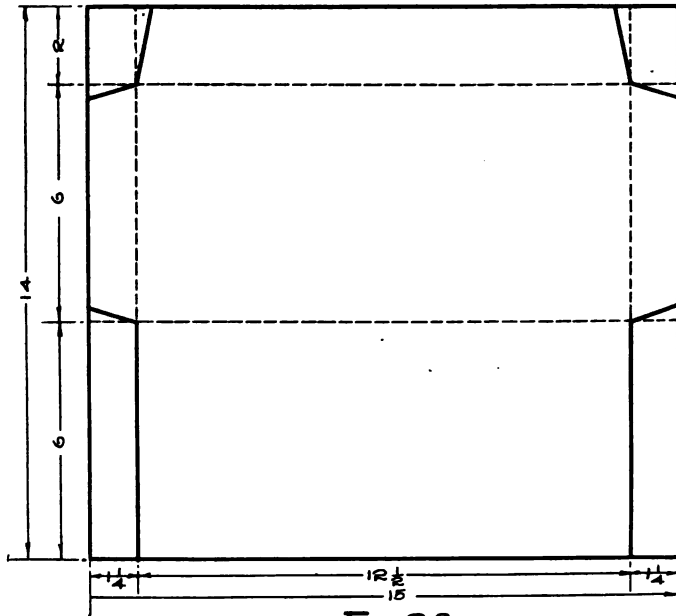


FIG 28

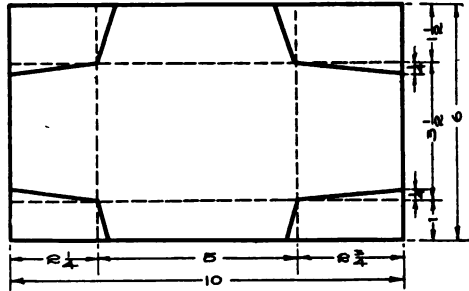


FIG 29

one-half of 4; 4 is one-half of 8; 5 is one-half of 10; 6 is one-half of 12; 8 is one-half of 16; etc. Or, 18 is 3 times 6; 24 is 3 times 8; etc.

When ready to use for seat work, cut off the upper and left row of figures on the 9-inch square, as they correspond with the figures on the large square. Cut the rest of the square into its small squares, and write number of each little square on the back as it is on the front. This makes it easier to handle the game.

The object of the game is to place the small squares in their

proper places on the large square in the shortest possible time. For example, if the child picks up a small square containing the product 24, it must be placed in the square under 6, opposite the 4 at the left.

If he picks up a product of 32, it is placed under 8, opposite 4, or in the square under 4, opposite 8.

When trying the arrangement the first time, let each child note the time it takes, and make a note of it. After a few days of practice take time again, to see how much has been gained. Let each child have for his aim to beat his own record rather than that of someone else.

It may take more than a half hour to place all the products the first time. After a couple of weeks, the time is sometimes reduced to six minutes. The exercise affords excellent drill in number.

Envelope

Purpose:

To hold the number board.

To give the pupils an opportunity to read and follow a pattern drawing.

Material:

One piece of kraft paper 14x15 inches.

Have a class discussion of the various ways the envelope might be constructed, and the color and texture of the paper. Why is kraft paper better than the manila or gray drawing paper?

Place Fig. 28 on the blackboard, and have pupils construct from the drawing. The drawing on the blackboard should be large enough to be seen from all parts of the room.

How long is the pattern drawing? How wide is it?

How much longer is it than it is wide?

How wide are the paste flaps?

How long and how wide is the flap that will cover the opening at the top?

Small Envelope

Purpose:

To hold $\frac{1}{4}$ -inch squares on which the multiplication tables have been written.

To give pupils an opportunity to construct an envelope based on previous experiences.

Material:

Use manila paper such as was used in the construction of the large envelope.

Presentation:

Pass to each child a piece of kraft paper. After a few general remarks on the construction of envelopes, ask the pupils to construct as large an envelope as possible from a 6x8-inch piece of paper. Fig. 29 shows pattern drawing.

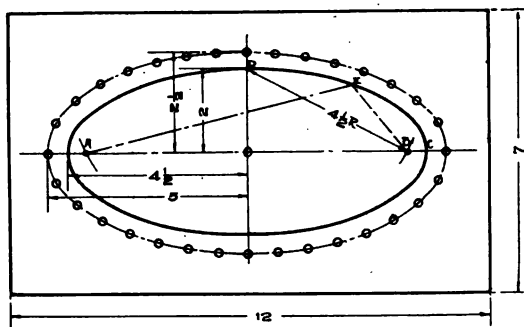


FIG 30

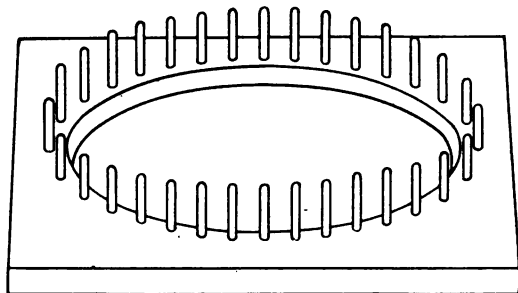


FIG 31

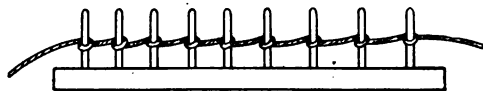


FIG 32

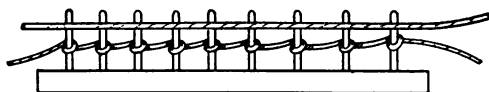


FIG 33

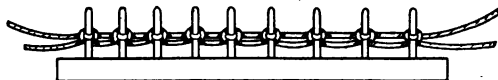


FIG 34

Weaving a Stocking Cap

In Fig. 30 is shown a working drawing of a loom on which a child may make a full-sized stocking cap.

It will not be possible for the pupils of the third grade to construct the loom. With a simple coping saw frame and blades and



Fig. 34A Cap in Process of Weaving.

an ordinary gimlet, boys of the fifth and sixth grades will find no difficulty in constructing this particular kind of loom.

If the looms cannot be made in the school the expense will be very slight to have them made at a regular carpenter shop.

The drawing shown at Fig. 30 gives the details of the construction.

On a half-inch board of basswood 12x7 inches describe an ellipse in the following way:

Taking as a radius one-half the long diameter, which is equal to O-C, and placing one leg of the compass at D, draw the arcs which intersect the long diameter at the points marked A and B. Place tacks at the points marked A, B, and D. Loop and tie a string around the three tacks. Remove the tack at D and place a pencil point in its place. Move the pencil, which is guided by the string, and the ellipse is drawn. The second ellipse on which the holes for the pegs are marked is secured in the way above mentioned, only making the ellipse one-half inch larger. In this case a radius of five inches is used instead of four and one-half. The leg of the compass is placed one-half inch above D, and the new arcs cut the long diameter at the point to the right of B, and at the point to the left of A.

Place the tacks as before and loop the string around them.

The holes on the circumference of the larger ellipse are placed three-fourths of an inch apart, one-half inch deep, one-fourth inch in diameter.

The Pegs:

For the pegs use $\frac{1}{4}$ -inch dowel rods, cut into pieces $1\frac{1}{2}$ inch long. The holes may be bored through the $\frac{1}{4}$ -inch basswood. Smooth the pegs with sandpaper; dip one end of each in glue and force them into the holes. Fig. 31 shows the dowels in place ready for the weaving.

To Do the Weaving:

The weaving on this loom is done the same as when weaving the mitten cords on the spool with the four pins.

Germantown is the best wool to use. The yarn is first twisted around the pegs as shown in Fig. 32. After twisting the yarn round each peg the weaving is done by holding the yarn just above the twist. Fig. 33.

With a darning needle lift the loop over the yarn on the peg, as shown in Fig. 34. This is continued until a piece is woven twice as long as the stocking cap is to be when finished. When the weaving is completed it is removed from the loom. One end is drawn through the weaving until it meets the other open end. These two ends are drawn together and a tassel is sewed on at this place. The other open end fits on to the head.

Caps, wristlets, mufflers, doll's muff and furs and numerous other articles may be woven on the circular loom.

Fig. 34A shows a cap on the loom.

Material for November:

Poster—Use scraps collected from various lessons.

Soldier Cap and { 50 pieces plain white paper.

Puritan Bonnet { 18x20-inch newspaper may be used.

Puritan Cradle—1 pkg. 9x12-inch construction paper.

Multiplication Game { 50 sheets of manila document, 12x12 inches.
 { 50 sheets of manila document, 9x9 inches.
 { 1 yard bookbinder's cloth.

Envelope for Number Board—50 sheets 15x20-inch kraft paper.

Small Envelope—50 sheets 9x12-inch construction paper.

Stocking Cap—Material to be brought in by pupils.

DECEMBER

Pin Case

Purpose:

To give pupils experience in handling a new material.

To give opportunity for design and experience in transferring design from checked paper to the cross-stitch canvas.

To make a practical gift to go into the home.

Material:

1 piece of canvas $7 \times 4\frac{1}{2}$ inches.

1 cross-stitch needle, Saxonia or D. M. C. No. 5.

2 pieces of light weight strawboard 3×4 inches.

Presentation:

Present to the class a finished pin case. (Fig. 35.) After a class discussion as to its use, materials, and combination of colors,

allow the pupils to begin to design. To introduce the work, it might be well to have the pupils copy a few simple designs from the blackboard. Fig. 36 shows a few designs.

Divide the canvas into two rectangles each $3\frac{1}{2} \times 4\frac{1}{2}$ inches.

It will be necessary to plan carefully.

The squares on the paper should correspond in number with the squares on the canvas.

Copy the design from the paper to the canvas in D. M. C.

When the cross-stitch work is completed, the two pieces of canvas are pasted over the strawboard. The pasting is done around the edges only and only on the quarter-inch, which turns over to the under side of the board.

When both boards are covered, the two are placed together and held together by an over and over-stitch, using thread the same color as the canvas.



Fig. 35 Finished Pin Case

A hanger may be made by braiding three strands of the thread used in the design. (Fig. 36.)

Each gift should be attractively done up in paper or a box.

Box to Hold Pin Case

Material:

2 pieces of paper, one $5\frac{1}{2} \times 6\frac{1}{2}$ inches, to be used for the box, and the other $5\frac{1}{2} \times 6\frac{1}{2}$ inches to be used for the cover.

The box when finished measures $3\frac{1}{2} \times 4\frac{1}{2}$ inches and $\frac{1}{2}$ inch deep, the sides being double.

The cover measures a trifle more.

The box is constructed the same as those suggested in previous exercises. (See Fig. 37 for pattern drawing.)

Needle Book

Purpose:

To interest the pupils in a home problem.

To give practical experience in constructing a problem involving the use of the cross and blanket stitches.

To aid in cultivating good taste in the combination of colors.

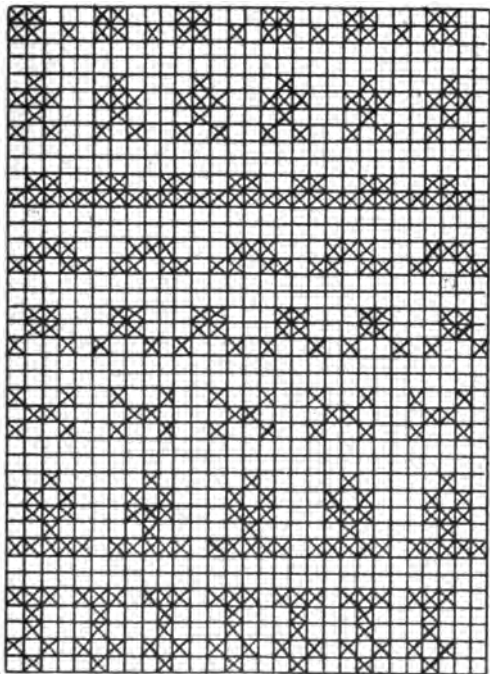


Fig. 36 Cross-stitch Designs.

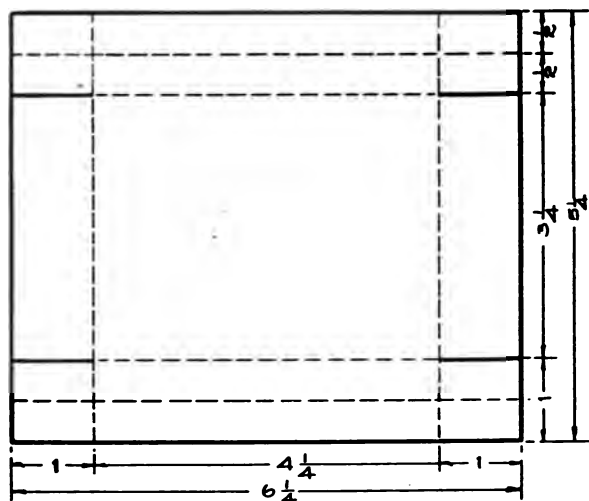


FIG 37

Material:

Cross-stitch canvas, cut 6×4 inches.

Cross-stitch needles.

Mercerized cotton, No. 3.

Outing flannel, cut $5\frac{1}{2} \times 3\frac{1}{2}$ inches.

Presentation:

Show the pupils a few good pieces of work done in cross-stitch. Place on the board several very simple cross-stitch designs, and have the pupils copy on checked paper. After they have the idea, permit them to make simple designs. Choose either what the pupils did or what was copied from the board, and have the design copied from the paper to the canvas in Saxonia.

It will be necessary to plan carefully. The squares on the paper should correspond in number with the squares on the canvas.

The outing flannel is used for leaves into which the needles are placed. These leaves are cut one-half inch shorter and one-half inch narrower than the outside cover of canvas.

The cross-stitch cover and the inner leaves of outing flannel are tied together with a piece of mercerized cotton the same as when making a pamphlet of paper.

Fig. 36 shows a few simple cross-stitch designs.

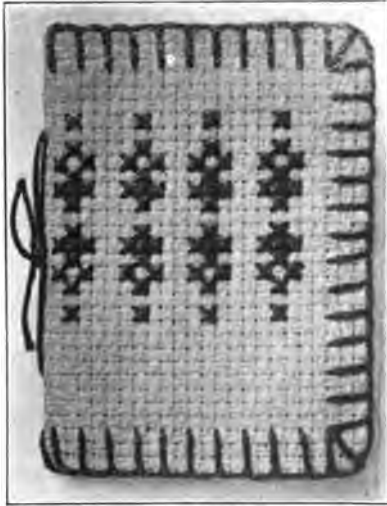
Fig. 38 shows a finished needle book.

Box

Construct box for needle book, as suggested for pin case, making it of the desired dimensions. Fig. 37.

Woven Work Bag

• Draw and cut from light weight strawboard an oblong $6\frac{1}{2}$ inches long and $7\frac{1}{2}$ inches wide. String the loom as shown in Fig. 39, with



• Fig. 38 Finished Needle Case.

16 strands of raffia, placing them around the oblong and tying them along the upper 8-inch edge. Fig. 39.

Begin the weaving, from right to left, close to the lower 8-inch edge. When introducing a new strand, weave the new strand along with the end of the old strand for two or three inches. As there is an even number of strands in the warp threads, the weaver must be passed under two strands of the warp at the beginning of each round of the weaver.

Weave close to the upper edge.

Untie the strands along the upper edge, hold the bag open, and knot the strands together, tying one to the next strand on the right, in a hard knot.

The edge may be finished with a flat braid, sewed over and over, or with a button-hole stitch.

Use two braided handles.

Fig. 40 shows finished bag.

Circle Maker

If the class has never used a circle maker, have one constructed at this time. Strips of a light weight strawboard $\frac{1}{2} \times 8$ inches may be cut on the paper cutter. These strips are passed to the pupils, who cut them $\frac{1}{2} \times 7$ inches. One-half inch is marked off at each end and the space between the lines just drawn is divided into inch and half-inch spaces. (Fig. 41.) A small hole is punched at one end, as shown in Fig. 41.

If a two-inch circle is to be drawn a pin is thrust through two

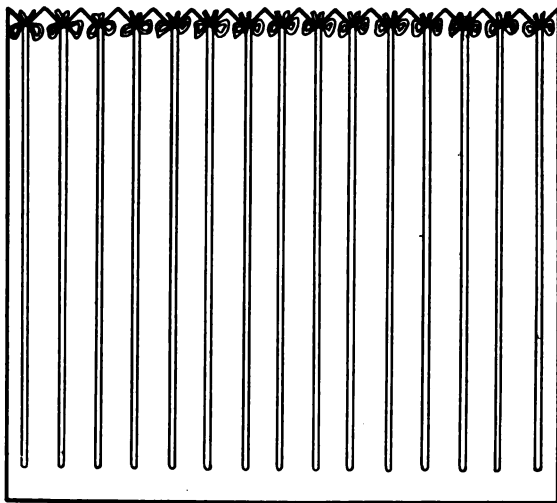


FIG39

one-inch marks and forced through a piece of paper which is placed on a heavy paper on the desk to prevent the pin from going into the desk. The pencil point is put through the hole at the end and swung around. Have several circles drawn, having the pupils measure the diameter each time. By careful questioning, the pupils will discover



FIG40

for themselves that the diameter is always double the distance taken on the circle maker.

Introduce diameter and circumference.

If the pupils have difficulty in holding the pin on which the circle maker swings, or if there is any danger of the pin defacing the desk top, the center circle may be marked by a pinhole.



Fig. 41.

The pin point may now be put from under side upward, thus bringing the head of the pin on the desk, and giving the pupils an opportunity to hold the pin (point upward) while describing the circle.

Blackboard Exercises

1. Draw a 4-inch circle.
2. Draw another circle one-half as large.
3. Draw a 2-inch circle.
4. Draw another circle one-half as large.
5. Draw a 3-inch circle.
6. Draw another circle one-half as large.

Handkerchief Bag

There are a number of interesting bags which may be made of raffia, either knotted or woven.

While the girls are weaving the bag, the boys may weave a circular mat.

Purpose:

- To give the pupils experience in threading a circular loom.
- To give practical number in halves, quarters, eighths, etc.
- To review circumference and radius.

Presentation:

Give a short talk on raffia, telling where it comes from, how it is dyed, etc.

Tell the pupils that raffia is not a kind of grass, but that it is the stripping of the palm leaf, the kind of palm from which the palm leaf fan is made. There is a certain time of the year when the outer covering of the palm may be stripped from the leaf. These strippings

are tied or braided into bundles and sold as raffia. Most of the raffia used in our schools comes from Madagascar, an island off the eastern coast of Africa.

Construction of Loom

Draw and cut, of bristol-board or strawboard, a strip $\frac{1}{2}$ inch wide and 7 inches long. Mark off as shown in Fig. 41. With this strip as a circle maker, describe a 5-inch circle, using the center of the square of strawboard as the center of the circle. (Fig. 42.)

Teach the pupils to find the center of the square by drawing the diagonals or a portion of the diagonals of the square. (Fig. 42.)

Divide the circle into eighths, sixteenths, or thirty-seconds, according to size. In this case the circle is divided into sixteenths.

Number the radii as in drawing. (Fig. 43.) With the darning needle, puncture the cardboard at each point where the radii touch the circumference of the circle.

The threading of the loom may be done with either raffia or carpet warp. Of the two, raffia makes a more attractive threading. It is, however, a little easier for the pupil to use the carpet warp. The loom, when ready, is threaded on both sides.

In order to begin with a thread of approximately the right length, have the pupils figure the length of a piece of thread that will go across one diameter eight times. This, of course, means eight times the diameter of the circle. (8x5 inches.)

Knowing what is required for one side, what is the length of the thread for both sides? Allow several inches surplus.

To thread the loom, tie a knot in one end of the warp, and proceed as follows:

Bring the needle up 1, down 9,
up 1, down 16,
up 8, down 16,
up 15, down 7,
up 15, down 14,
up 6, down 14,
up 13, down 5,
up 13, down 12,
up 4, down 12,
up 11, down 3,
up 11, down 10,
up 2, down 10.

Fasten securely, cutting off surplus. Thread the needle with raffia, and pass the end under the crossed warp threads at center, and tie up in a hard knot.

Begin the weaving at the center, beginning with thread 10, go-

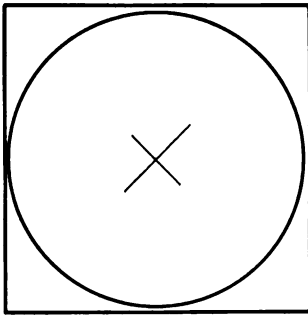


FIG42

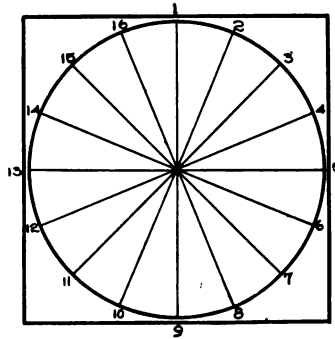


FIG43

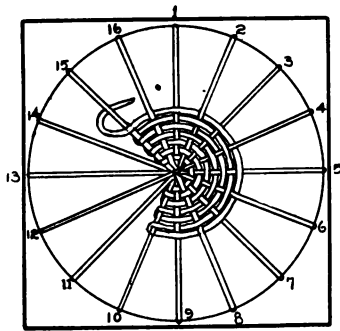


FIG44



FIG45

ing over one thread and under the next, to thread 15. From 15, weave back to 10. Continue in this way until this portion of the circle is completed to the circumference. (Fig. 44.) Weave the other side the same way.

Cut threads between points 11 and 10, 12 and 13, 14 and 15. Thread each end in needle and weave back along corresponding threads. For example, 11 will weave back with 3; 12 with 4; 15 with 5, etc. Break the cardboard around circumference and remove inner portion.

By using a 3 or 4-strand braid for a handle, the bag is completed, and may be used by little girls for handkerchiefs. (Fig. 45.)

Mat

Draw on a square of light weight bristol-board, strawboard, or clothboard, a circle of desirable size for the mat.

Divide the circle into eighths, sixteenths, or thirty-seconds, according to size, as in the bag. Number the radii as in Fig. 43. Thread the needle with raffia and tie a knot in the small end.

Bring the needle through 1, leaving the knot on the back. Carry the thread across to 9, through to the back and on to 8; up through 8, across to 16, through to the back and on to 15; up through 15, across to 7, through to the back and on to 6; up through 6, across to 14, through to the back and on to 13; up to 13, across to 5, through to the back and on to 4; up through 4, across to 12, through to the back and on to 11; up through 11, across to 3, through to the back and on to 2; up through 2, across to 10, through to the back, and up half way between 9 and 10.

Bring the thread back to the center, making an odd number of strands, which is necessary in order to do continuous weaving, going under one and over one. Here the thread is tied securely to the centers of the other strands. Begin weaving at the center, going over and under the next thread.

Weave a new thread along with the old one for two or three inches, thus avoiding knots. When the weaving is finished close to the edge, cut the threads with which the mat was strung, between 2 and 3, 4 and 5, 6 and 7, etc., on the back side of the mat. Remove the strawboard.

Tie the cut ends in twos, in hard knots. Go round the edge

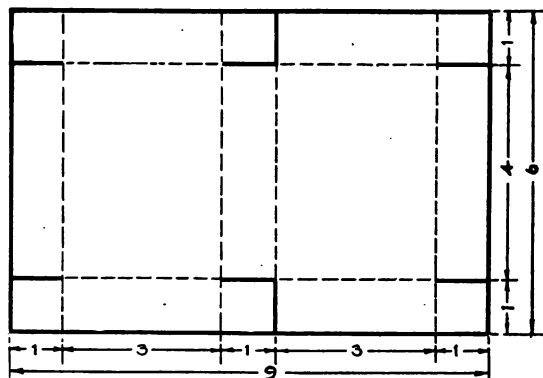


Fig46

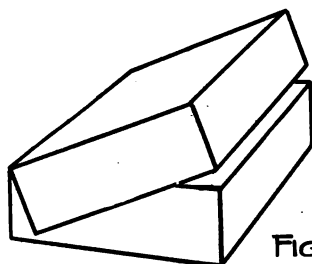


Fig47

again, tying the right hand strand of one knot to the left hand strand of the next knot.

Box With Cover Attached

Fig. 46 shows a pattern drawing for a very interesting candy box, with cover attached. It is made of a piece of tinted construction paper 6x9 inches.

It must be remembered that all dotted lines are scored and all continuous lines are to be cut.

Allow squares in corners to paste to inside of box and cover

If the dotted lines are scored before attempting to fold, the exercise makes a much better appearance when finished.

Fig. 47 shows finished box.

Christmas Basket

This basket may be made of tinted construction paper. The pattern drawing shows all dimensions. (Fig. 48.)

It will be observed that no paste flaps are allowed at corners. This is due to the fact that the corners are held together by a strip $\frac{1}{4}$ inch wide and 12 inches long, pasted around the top. (Fig. 49.)

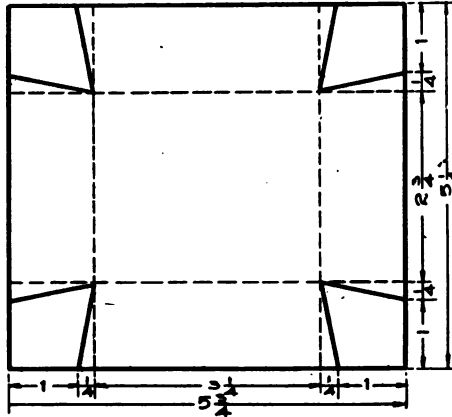


Fig48

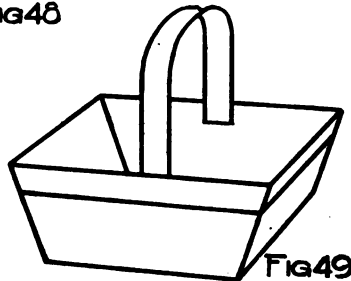


Fig49

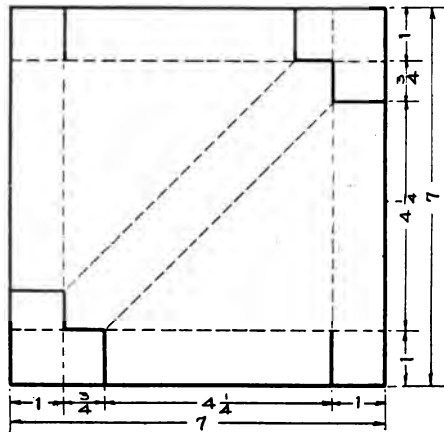


Fig 50

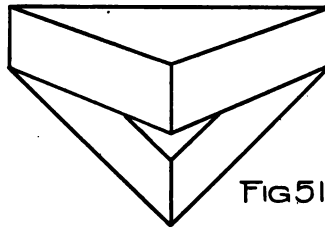


Fig 51

Begin to paste strip at middle of one side, or end. By so doing, the coming together of ends does not occur at a corner.

Triangular Candy Box

Fig. 50 shows a pattern drawing for a triangular candy box. Fig. 51 shows finished box.

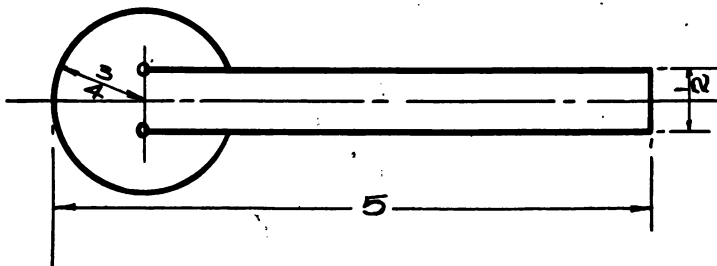


Fig. 52 Book Mark.

Circular Book Mark

Fig. 52 is the pattern drawing for a very interesting book mark. It makes a very attractive Christmas gift when made of a fairly stiff paper and properly decorated.

Draw a horizontal line 5 inches long.

From one end set off radius $\frac{3}{4}$ inch and describe a circle.

Draw lines parallel to the horizontal line $\frac{1}{4}$ inch from it, on each side, and complete end of model by vertical line.

Have the parallel lines just drawn extend $\frac{1}{2}$ inch within circular part.

Small holes may be punched at the extremities of these lines. Cut on all heavy lines. (Fig. 52.)

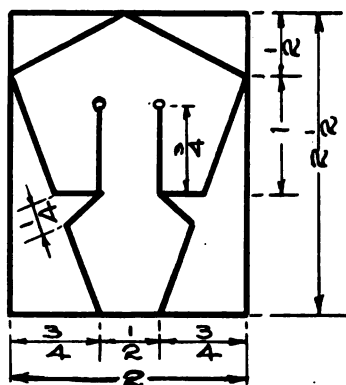


Fig. 53 Book Mark.

Book Mark

Fig. 53 shows another interesting book mark.

Construct rectangle $2\frac{1}{2} \times 2$ inches.

Draw lines inside parallel to the sides.

Mark off distances and draw oblique lines.

Cut on all heavy lines.

Material for December:

Pin Case	{	2 $\frac{1}{4}$ yards cross-stitch canvas.
		2 pkgs. cross-stitch needles.
		25 skeins mercerized cotton.
		1 sheet of strawboard, 24x36 inches.

Box for Pin Case—1 pkg. 6x9-inch construction paper.

- Needle Book { 2 yards cross-stitch canvas.
2 pkgs. cross-stitch needles.
28 skeins mercerized cotton.
4 yards outing flannel.
- Needle Book—1 pkg. 6x9-inch construction paper.
- Woven Bag { 50 sheets strawboard, $6\frac{1}{4} \times 7\frac{1}{2}$ inches.
3 lbs. natural raffia.
 $\frac{1}{2}$ lb. black raffia.
 $\frac{1}{2}$ lb. mahogany raffia.
1 spool carpet warp.
- Circle Maker—50 strips of strawboard.
- Handkerchief { 50 six-inch squares strawboard.
1 spool carpet warp.
- Bag { 3 lbs. natural raffia.
 $\frac{1}{2}$ lb. black raffia.
 $\frac{1}{2}$ lb. green raffia.
2 pkgs. darning needles, No. 12.
- Gift Box—1 pkg. 6x9-inch construction paper.
- Christmas Basket—1 pkg. 9x12-inch construction paper.
- Triangular Candy Box—1 pkg. 9x12-inch construction paper.
- Book Marks—1 pkg. 6x9-inch construction paper.

JANUARY

Book Bag

There are certain districts in every city in which the construction of a book bag would create but little interest. While the construction remains the same, the bag may be made for shoes, and therefore find a place in some homes in which the book bag is not desirable.

The bag might be called a "catch-all," or a bag for soiled handkerchiefs and towels. The problem is one that may be made suitable to almost any class of pupils.

Purpose:

To give the pupils accurate measuring in the construction of the cardboard loom. If the school is furnished with the Todd looms, the construction of the loom is not necessary.

To give a simple problem in weaving.

To familiarize the pupils with the terms warp and woof.

To give the pupils an appreciation for a handmade article.

To teach them to respect labor.

To give the pupils a practical problem.

To give them an opportunity to design, and to choose harmonious color combinations.

To make practical the number work.

Material:

One piece of clothboard 10½x11 inches or any other kind of heavy paper suitable for a loom. Hard-twisted 2-ply jute or any other material suitable for weaving.

Tools:

Number 12 or 14 darning needle.

Harper packing needle No. 8 to be used for weaving. Any large needle will do.

Rulers, pencils and scissors.

Presentation:

Since this problem, the bag, comes the nearest to a child's attempt to weave a piece of cloth, it would be well to furnish each child with a piece of coarse material like ordinary gunny-sacking, burlap, or monk's cloth, and have him unravel it before beginning to weave. In these samples, the threads are easily followed in the unravelling, and the warp and woof designated. It will be found that the warp and the woof are of the same material.

In the bag, the warp and the woof will not be of the same material, as the warp is to be of the regular cotton carpet warp, and the woof is of jute or any other weaving material.

There is a reason for this difference in the warp and the woof. If the warp is of the same material as the woof, which in this case is jute, the threading of the loom is more difficult. It is also more difficult to press the jute down in place, as there is a tendency for the woof to stick to the warp when it is of jute. The carpet warp is easily threaded into the darning needle, and the jute readily slips into place when woven over and under the warp.

Different fibers are often combined in the weaving of fabrics. There may be found in the market, fabrics that are a combination of cotton and wool, silk and cotton, silk and linen, and numerous other combinations.

If possible, secure a small amount of raw wool, cotton, silk, and flax. Let the pupils see that some of these fibers are animal products and some are vegetable. It is just possible that in some vacant lot in the vicinity of the school, stalks of tall weeds may be found. From many of these the outer covering of the stalk may be removed in long fibers. At least enough may be found and twisted with the fingers to give the pupils an idea of how the fibers of jute, hemp, and flax are twisted by machinery into threads.

If an old spinning wheel can be found in the neighborhood, borrow it, and if possible, find someone who can run the wheel. From such a demonstration will grow numerous drawings, cuttings, history, oral and written language lessons, as well as giving the pupils an intelligent basis for their elementary weaving and sewing.

Construction of Loom

Discuss with the class the use of the bag, its size and construction, the use of a flap and handles. If, for any reason, it is thought best to change the size of the clothboard, which is to serve as loom, from $10\frac{1}{2} \times 11$ inches, to other dimensions, feel perfectly free to do so.

In order to construct the bag so it will be closed at the edges, it will be necessary to thread the loom on both sides, and do the weaving around the board. The various drawings also show the flap, which is woven in such a way as to cover the opening at the top when finished.

The threading of the circular mat of last month will aid greatly in the threading for the bag.

Place the clothboard so the $10\frac{1}{2}$ -inch edge is parallel with the front edge of the desk, and one-half inch from this edge, draw a straight line.

The warp threads are to be one-fourth inch apart. How many threads will it take to thread one side? If each warp thread, count-

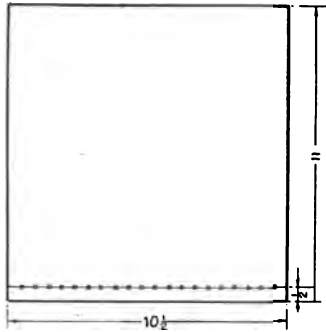


Fig 54



Fig 55

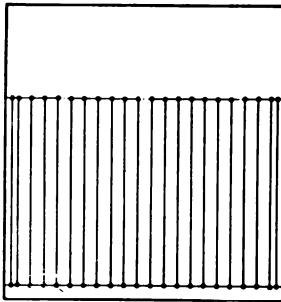


Fig 56

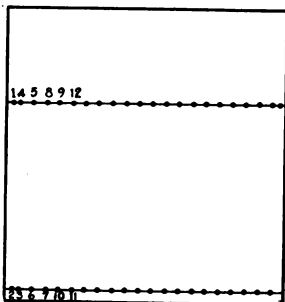


Fig 57

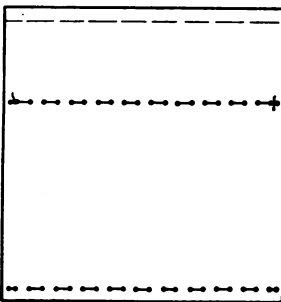


Fig 58

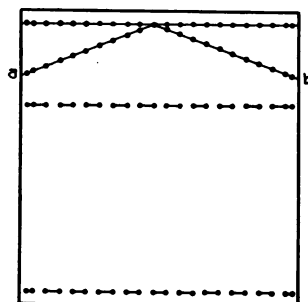


Fig 59

ing the stitch on the back, is $7\frac{1}{2}$ inches long, how much carpet warp will it take to thread one side of the loom?

On the line just drawn, place dots one-quarter inch apart. Fig. 54. Seven inches from, and parallel to this, draw another line, and on it place dots one-quarter inch apart. Fig. 55.

Divide the first and last quarter inches into halves, as indicated

by dotted lines in Fig. 55. Connect corresponding dots by straight lines. Fig. 56. This gives an idea of how the loom should look when threaded. At each dot puncture with darning needle. Number as shown in Fig. 57.

Thread the darning needle with carpet warp and begin to thread the loom on one side.

Bring the needle up through 1, leaving an end. Down through 2, up 3, down 4. With the end left and the thread in the needle, tie a hard knot close to 4. Come up 5 and down 6. Continue in this way until the loom is threaded on one side. The first two threads at each end are only one-eighth inch apart. The front side of the loom now looks like Fig. 56. The back looks like Fig. 58.

In threading, care should be taken to not draw the warp threads too tight, as considerable slack is needed to allow for the passing over and under of the woof.

When threading the back, provision is made for the flap. The flap may be made in various shapes, as shown in Figs. 60, 62, and 63. To construct Fig. 60 proceed as follows:

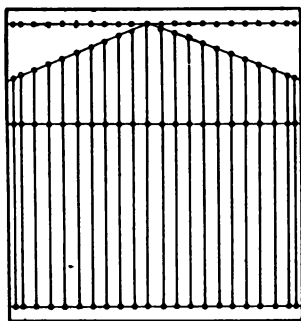


FIG 60

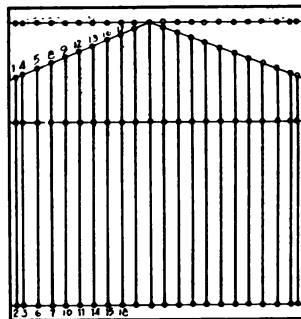


FIG 61

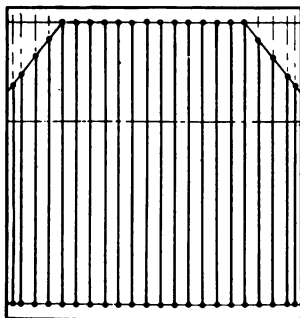


FIG 62

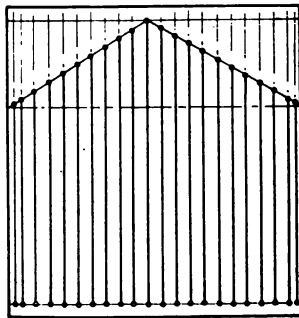


FIG 63



Fig. 64 Finished Bag.

On the back, shown in Fig. 59, draw a straight line one-half inch from edge. On this line place dots one-quarter inch apart. Divide the first and last quarter inches into halves, the same as when threading the front of the loom.

On the right and left edges of the loom, place dots $8\frac{1}{2}$ inches from the front edge as indicated by points a and b, Fig. 59.

Find one-half of the line along the back edge, and connect points as shown in Fig. 59. On these slanting straight lines, place dots just opposite those on the line above.



Fig. 65 Bag Made From Two Rugs.

Place the ruler across corresponding dots, and connect by straight lines as shown in Fig. 60. This gives an idea of how the back will look when threaded. Number the ends of lines, Fig. 61, and with the darning needle, puncture each point.

Begin to thread by bringing the needle up through 1, down 2, up 3, down 4, and tie a hard knot. Continue until this side of the loom is threaded.

The threading of the loom is now completed, and the weaving is to begin.

Take a piece of jute long enough for the child to conveniently handle. Thread it in the packing needle, and begin to weave by passing the needle over one and under one. Weave around edges of cardboard. When once around it will be found that the needle passes over and under the same warp threads. This is due to the fact that there is an even number of warp threads. In order to do continuous weaving and not have it come so, there must be an uneven number of warp threads.

We have, however, an even number; so, to avoid passing under and over the same threads, the needle each time around is passed *under* two warp threads, and then proceeds in the usual way. Never pass the needle over two threads unless you wish the over stitch to form some part of the decoration. In this particular case, this sort of decoration is not wanted.

When adding a new thread, weave the new thread along with the old one for two or three inches, thus avoiding knots. Continue weaving around the cardboard until the bag part of the problem is finished. The weaving of the flap is done on one side by weaving back and forth.

When the weaving is completed, the small strips at the top and bottom are broken off and the remainder of the cardboard is slipped out in one piece. It will be found that the bag is open at the bottom. This necessitates sewing across the bottom with a simple over-and-over stitch.

For the handle, make either a three or a four-strand braid of the jute, using strands of different color. The braid sewed to the edge of the flap makes a very attractive finish. Fig. 64 shows the finished bag. If the Todd loom is used two rugs are woven and sewed together as shown in Fig. 65.

Hinged Spelling Blank Cover

Children delight in the construction of any kind of a book for which there is a direct use. The value of construction work is so often placed on the finished product and not on the processes producing the article. The finished product is the least to be considered when one takes into consideration the development that is brought about through the construction.

Purpose:

To give the pupils a practical problem in simple book construction.

- To give the pupils a way of preserving their spelling lessons.
- To give a choice in combinations of colors.
- To give an opportunity to make practical the number acquired through the academic work.

Material:

- Four pieces of cover paper.
- Two pieces of jute board. Cardboard taken from boxes will answer the purpose. One piece is cut $3\frac{1}{2} \times 6\frac{1}{2}$ inches, the other piece $3\frac{1}{2} \times 5\frac{1}{2}$ inches.
- Bookbinder's cloth (Vellum de Luxe).
- Paste.
- Two brass paper fasteners.

Tools:

- Ruler, scissors, punch, and book press.

Presentation:

Show the pupils a finished cover. Place before them the various colors of paper and bookbinder's cloth, allowing them to make a choice in combining colors. This is the first book in which the edges at the foundation board are covered.

There are really two problems in one, as the back and the front covers are constructed quite differently.

Let us first consider the back cover, which is $3\frac{1}{2} \times 6\frac{1}{2}$ inches. This is to be covered by some tint of cover paper chosen by the pupil.

Cover paper is preferred to tinted construction paper because of its weight. The heavier the paper, the more difficult the pasting.

In all construction, so far as possible, present problems to the pupils giving them an opportunity to work out the required dimensions.

For example: The foundation cover is $3\frac{1}{2}$ inches wide and $6\frac{1}{2}$

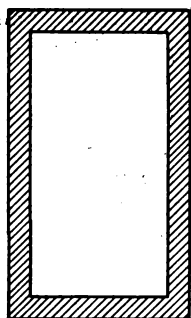


FIG 66



FIG 67

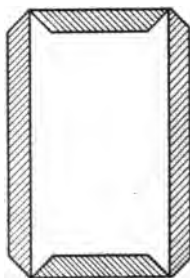


FIG 68



FIG 69

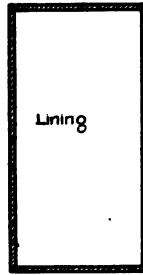


FIG 70

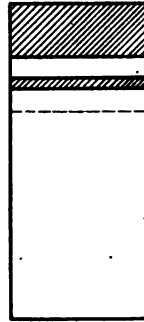


FIG 71

inches long. How large must a piece of cover paper be cut to turn over one-half inch on each edge to the inside? Fig. 66.

Apply paste to the cover paper and lay the jute board on it in such a position that the cover paper extends one-half inch beyond each edge of the jute board. Fig. 66. Cut away each corner of the cover paper as shown in Fig. 67.

It will be observed that the corner of the cover paper is cut so it lacks about one-eighth of an inch from touching the edge of the corner of the jute board.

Turn the cover paper over to the inside of the jute board. Turn upper and lower edges first, as shown in Fig. 68. With the thumb or finger nail, press in the corners and then turn the cover paper along the sides to the inside of jute board. Fig. 69.

These covers may now be placed in the book press.

To finish the cover, a lining of the same color paper as is used on the outside must be cut $\frac{1}{4}$ inch shorter and $\frac{1}{4}$ inch narrower than the jute board, and pasted over the inside of Fig. 69. The lining is 3x6 inches. This allows a margin of $\frac{1}{8}$ inch, as shown in Fig. 70.

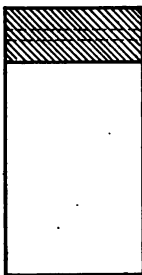


FIG 72

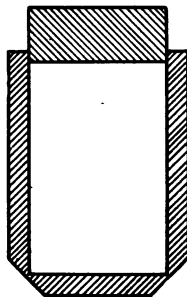


FIG 73

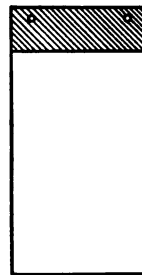
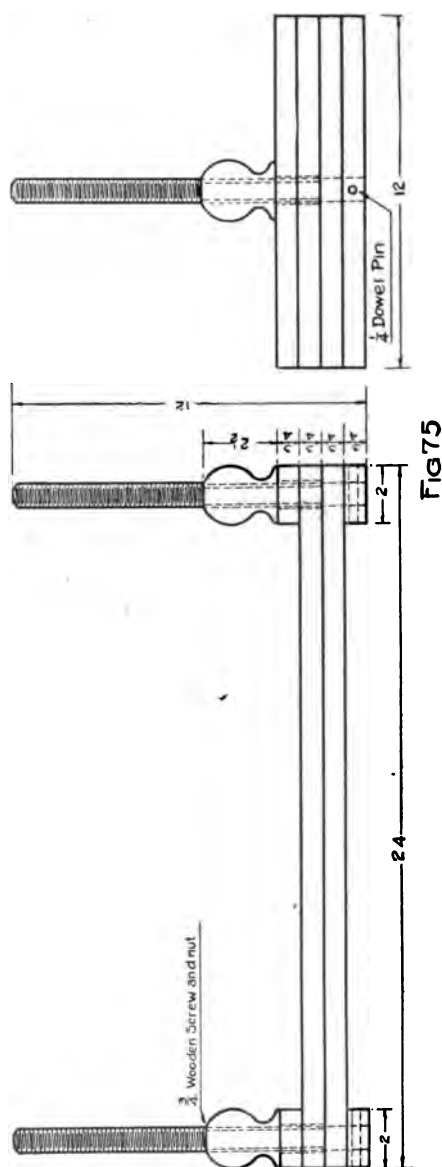


FIG 74



The Hinged Cover

From the piece of jute board $3\frac{1}{2} \times 5\frac{1}{2}$ inches, cut a half-inch strip from the short edge.

Cut a piece of bookbinder's cloth $3\frac{1}{2} \times 2\frac{1}{2}$ inches. Fold this strip into halves, lengthwise. Apply paste to bookbinder's cloth and lay the narrow strip of jute board so one long edge just meets the crease. One-quarter inch from the other long edge of the narrow strip of jute board, place the larger piece of jute board, as shown in Fig. 71.

Fold the upper half of bookbinder's cloth (Fig. 71) so it comes down over the narrow strip and on to the larger piece of jute board. Fig. 72. The quarter-inch space between the narrow strip of jute board and the larger piece, forms the hinge, allowing the large piece to be turned back when so desired. It will be observed that the edges of the bookbinder's cloth just meet the edges of the heavy paper used in the foundation covers. If the teacher so desires, the bookbinder's cloth may be cut $4\frac{1}{2} \times 2\frac{1}{2}$ inches. Paste is applied, and the pieces placed as above described. It will now be found that one-half inch of the cloth extends beyond the edges of the cover. One thickness of the cloth is cut away. The other part is turned in at each edge before the upper half is turned down over the hinged part. By cutting away a triangular piece from each edge of the half folded cover a neat finish is secured. By this process the edges of the cardboard are covered, thus making a more neatly finished cover.

It is now necessary to cover the jute board with cover paper. Fig. 73. This is done the same as in Figs. 67, 68, and 69. Cut lining as in Fig. 70.

While constructing the hinged cover the back should often be used as a reference. The hinged cover must, when finished, be just as long and as wide as the back cover. Two holes may be punched through the back and narrow strip, and brass paper fasteners used to bind the cover and spelling papers together. Fig. 74.

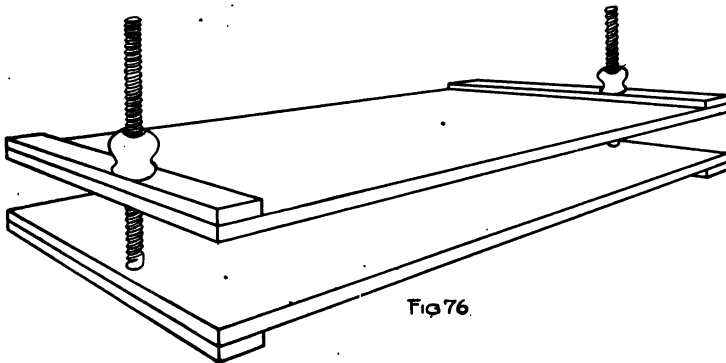


Fig 76

Book Press

A simple and inexpensive book press may be made as shown in Fig. 76. Fig. 75 shows the working drawing. This press may be made by the boys in the elementary manual training. If there is no manual training department in the building have a carpenter make it. Even the simplest kind of bookbinding is poorly done without a press. The wooden screws are $\frac{3}{4}$ of an inch in diameter and 12 inches long.

Material for January:

Book Bag	{	Card or clothboard looms.
		5 lbs. jute.
Hinged Spell- ing Blank Cover	{	2 pkgs. darning needles, No. 12.
		If possible wooden needles for weaving.
		1 pkg. 6x9-inch cover paper.
		50 pieces jute board $3\frac{1}{4} \times 6\frac{1}{2}$ inches.
		50 pieces jute board, $3\frac{1}{4} \times 5\frac{1}{8}$ inches (100 pupils)
		$\frac{1}{2}$ yd. bookbinder's cloth.
		1 box brass paper fasteners.
		1 pkg. number or unruled language paper.

FEBRUARY

The third-grade work for the past two months has been heavy. It is, therefore, desirable to make the work for February somewhat lighter, thus giving teachers and pupils an opportunity to catch up on back work.

Valentines

A blackboard exercise on the drawing of rectangles should precede the construction of valentines.

Material:

Tinted construction paper.

Using tints of the same color, draw three rectangles—brown 3x8 inches; (tan) $2\frac{1}{2}$ x7 $\frac{1}{2}$ inches; (brown) 2x7 inches.

Fold each into halves by bringing the short edges together. Place one within the other and tie at back with any kind of twine, harmonious in color. See Fig. 77. On inside, write some little message.

Envelope for Valentine

Since the pupils have already constructed a number of envelopes, it might be well to pass to each pupil the material required for the construction of an envelope which will be large enough for the valentine just made.

Circular Valentine

If the pupils have never used a circle marker, follow directions given in the December outline on Circle Maker.

Blackboard Exercises

Draw a 4-inch circle.

Draw a 3-inch circle.

Draw a 5-inch circle.

Draw a 4-inch square.

From center of 4-inch square, inscribe a $3\frac{1}{2}$ -inch circle.

Valentine

Use tints of the same color of construction paper. Draw a rectangle 4x8 inches. Fold into halves by bringing the short edges together. Find center of square by drawing

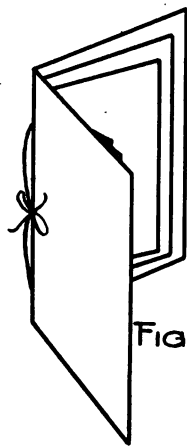


Fig 77

a part of the diagonals as shown in Fig. 78. Place the folded edge to the left. One-quarter inch to the left of the center, place a dot. Using this dot as a center, draw a circle with a radius one-half the length of the square. In this case it is one-half of 4. The circle extends beyond the square as shown in Fig. 79.

When cutting the circle, cut only that part of the circumference within the square, as shown in Fig. 80.

Draw a rectangle $3\frac{1}{2} \times 7\frac{1}{2}$ inches. Fold into halves by bringing the two short edges together. Place the closed edge to the left. Find center of square, and place a dot $\frac{1}{4}$ inch to the left. Using this dot as a center, draw a circle, using a radius one-half the length of the square. Cut as in previous exercise.

The two halves are hinged in each case. Place one within the other, and tie at back with any kind of twine.

Construct Envelope for Circular Valentine

This may be a square envelope made of kraft or tinted construction paper.

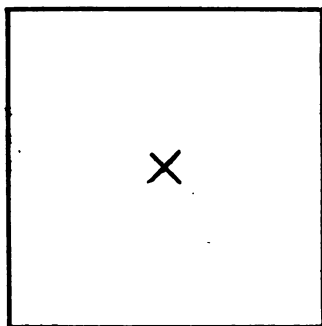


Fig 78

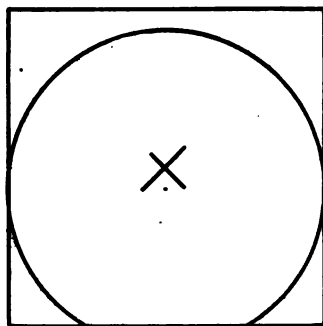


Fig 79

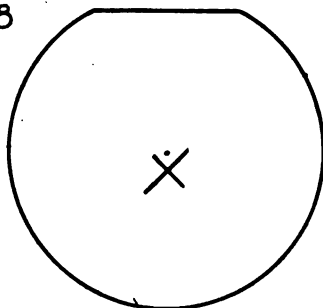


Fig 80

Lincoln and Washington Badge

Purpose:

- To interest the pupils in the history for the month.
- To encourage patriotism.
- To add interest in the work on circles.

Material:

Red, white, and blue paper.

Presentation:

Draw a $1\frac{1}{2}$ -inch circle of red; a 1-inch circle of white; and a $\frac{1}{2}$ -inch circle of blue.

Draw and cut three streamers of red, white and blue paper, $\frac{1}{2} \times 4$ inches, and arrange as shown in Fig. 81.

Decorated Spelling Book

This is nothing more than a single section book sewed so the knot is on the inside. The sewing has been described in previous exercises.

The book is made of 8x10-inch unruled white language paper or it may be made of 9x12-inch manila drawing paper with one sheet of 9x12-inch tinted construction paper used for the cover.

To Make the Cover:

First allow for a $\frac{1}{4}$ -inch margin around the 9x12-inch piece of construction paper, Fig. 82. The sheet is now folded into halves by folding the short edges together as shown in Fig. 83. So far as possible this exercise will be kept in quarter-inch measurements. One inch from the center crease draw a line on each side of the cover. One-quarter inch from this line draw another. Three-quarters of an inch from the last line drawn, draw another. Continue in this way until the margin line is reached, Fig. 84. On the vertical margin lines place dots $1\frac{1}{4}$ inch apart and connect corresponding dots as shown in Fig. 85. By making use of stick printing the rectangular spaces may be printed as shown in Fig. 86. The cover is now finished.

The inside leaves may now be folded into halves and placed inside the cover. The book is now sewed, cover and all. A strip of book-binder's cloth, two and one-quarter inches wide and nine inches long, is creased down the center lengthwise. Paste is applied and it is pasted down the back of the book as shown in Fig. 86.

The book is now placed into the book press and left for a couple of days. After being thoroughly pressed it is trimmed, thus reducing the margin just a little. Fig. 87 shows a few of the different shaped

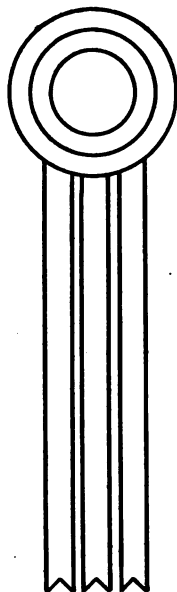


Fig 81

Decorated Spelling
Blank Book

- { 3 pkgs. 8x10-inch language paper or 3 pkgs.
9x12-inch manila drawing paper.
1 pkg. 9x12-inch tinted construction paper.
1 set sticks and pads.

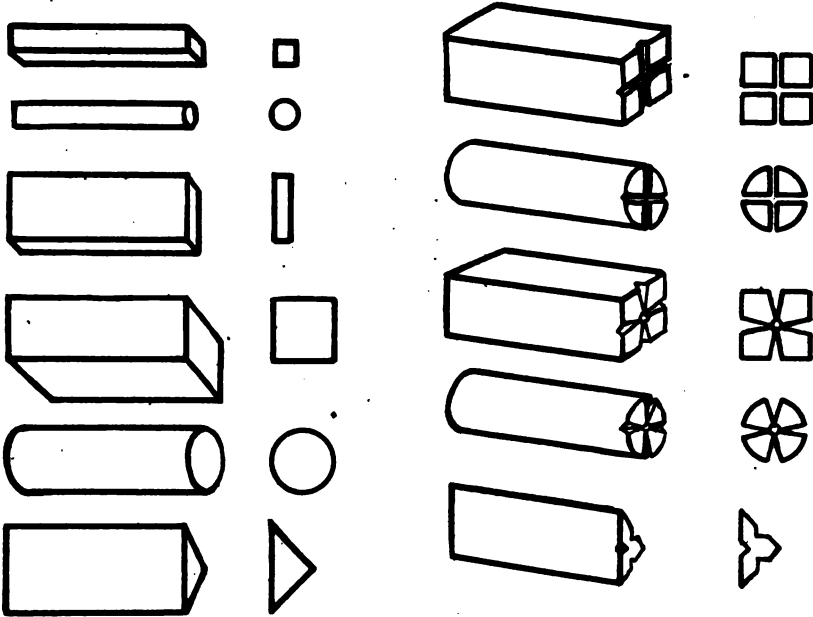


Fig. 87.

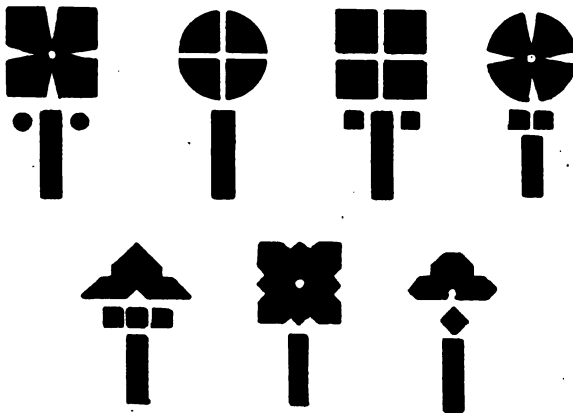


Fig. 88.

MARCH

Cutting and Tearing

March is the month of winds. Make cuttings and tearings to illustrate the blowing wind.

An occasional crocus or snowdrop makes its appearance and very often the more adventurous robins make their return from the South. All these are good suggestions for cutting.

A most interesting plan for the first three grades is to set aside a portion of the blackboard or a large sheet of manila paper might be used. On this mount your drawings and cuttings that suggest signs of spring.

Marble or Jackstone Bag

This problem may be so planned that the boys may use the bag for marbles and the girls may use it for jackstones.

Purpose:

To give the pupils a review in measuring in whole, half, and quarter inches.

To make the number work practical.

To encourage neatness and accuracy.

Material:

One piece of cardboard $3\frac{1}{2} \times 5$ inches. These boards may be cut from strawboard boxes brought in by the pupils.

Carpet warp and butcher's twine. The bag may be made of all carpet warp, using it for both warp and woof; or carpet warp may be used for the warp and butcher's twine for the woof.

Darning needle No. 12.

No. 8 Harper packing needle. If the Harper needle cannot be secured use the darning needle for weaving. Small wooden needles may be made by the boys.

Presentation:

As this is the season for jackstones and marbles it will take but little effort on the part of the teacher to enthuse the pupils.

To Thread the Loom:

On the cardboard $3\frac{1}{2} \times 5$ inches draw lines $\frac{1}{4}$ inch from each end. Fig. 89. On these lines place dots $\frac{1}{4}$ inch apart. Fig. 89.

Divide the first and last quarter-inch on each line into halves. Fig. 90.

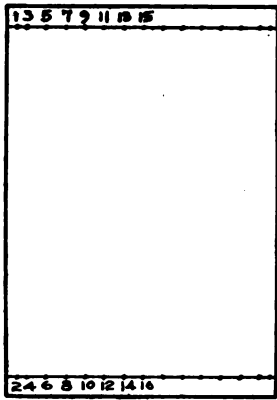


FIG 89

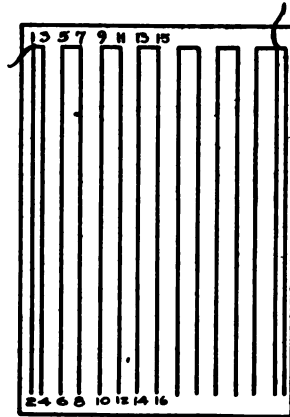


FIG 90

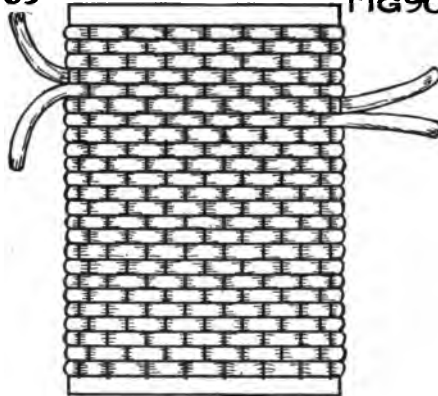


FIG 91

With the darning needle, puncture the cardboard at each dot. Number the holes as shown in Fig. 89.

Force the darning needle down through hole No. 1, leaving an end as in Fig. 90. Bring the needle up through hole No. 2 and back to No. 1. With the first end, and the thread in the needle, tie a hard knot and force the needle through hole No. 3, down and up through No. 4, back and down No. 3, a second time; up through 5, down through 6, back through No. 5 a second time, down No. 7, up through No. 8 and down No. 7 a second time, up through No. 9, down through No. 10; and so on until the loom is threaded. Fig. 90.

It will be observed that at one end there is no passing from one hole to the other on the horizontal line. The end forms the bottom of the bag and is closed when taken from the loom. The other end is the top, and is open.

Begin to weave at the bottom, using either carpet warp or candle wicking.

To Make Drawstrings:

When the weaving is finished to about $\frac{3}{4}$ inch from the top, begin with a new thread. Begin to weave by leaving a long end to the right. Fig. 91. Weave around once and cut the thread, leaving another long end to the right. Fig. 91.

With the thread cut, begin to weave at opposite side of loom by leaving a long end to the left. Fig. 91. Finish the weaving, as in the beginning, weaving as closely to the top as possible.

If it is so desired, the drawstrings may be woven in right next to the top. The little heading given by weaving the drawstrings $\frac{3}{4}$ inch from the top adds a little to the appearance of the bag.

Number Growing Out of the Marble Bag

What is the combined length of the two short edges of the loom?

What is the combined length of one long edge and one short edge?

What is the perimeter of the loom?

What is the length of each warp thread? How long a thread must I have to thread up and down five times, four times, six times, etc.?

Following the above suggestions make as many examples as possible.

Ash Splint Basket

Ash splint is used rather extensively in the fourth and fifth grades. In order that third grade pupils may take up the advanced work more readily, the simple basket shown on the following page is recommended for construction.

To construct this basket the lightest weight ash splint is used.

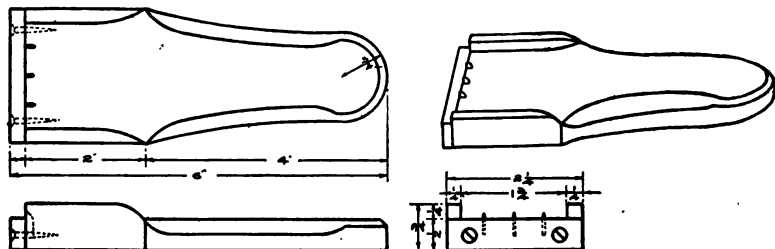


Fig. 91A Ash Splint Gauge.

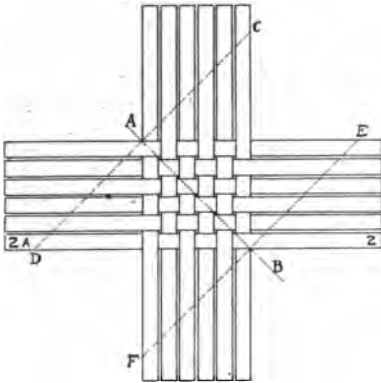


Fig 92

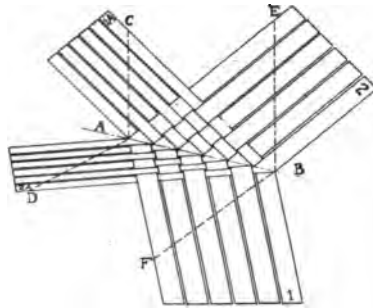


Fig 93

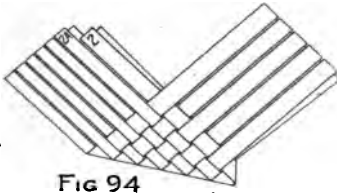


Fig 94

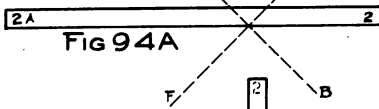


Fig 94A

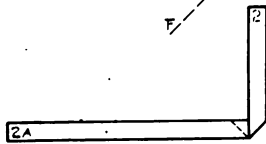


Fig 94B

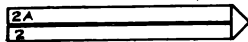


Fig 94C

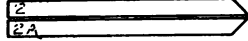


Fig 94D

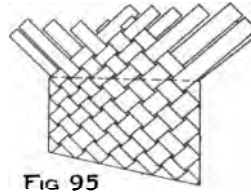


Fig 95



Shavings from the neighboring carpenter shop may very successfully be used for the basket suggested.

Splints from various woods are nothing more than long shaving-like bands taken from logs of oak, ash, hickory, etc.

The Cutting Gauge:

The splints are cut into various widths by the use of a gauge, as shown in Fig. 91A. Such a gauge may be made by the boys of the manual training department.

The little points of steel which do the cutting are simply pieces of discarded watch springs, which may be obtained at any watch repair shop for the asking.

The little knife-like projections are filed after being placed. Each teacher should have several gauges for cutting different widths. The distance between the points determines the width of the splint. The most used splints are $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{3}{8}$ inch in width.

Cutting the Splints:

The splints or shavings are first soaked for a minute or two in cold water.

The gauge is held in the right hand. One end of the splint is pressed down on the points. With the left hand the splint or shaving is drawn over the points which cuts them into the desired widths. Sometimes two persons do the cutting, one holding the gauge and guiding the splint while the other pulls the splint. A very short time is consumed in preparing material for an entire room.

To make the basket at hand, first cut 12 strips each 14 inches long and $\frac{1}{4}$ inch wide. Interweave, as shown in Fig. 92. Place a ruler as shown on the line CD and score with a knife, being careful to not press hard enough to cut the splints. Repeat by placing the ruler as described by EF. The woven part is in the shape of a square. Fold square diagonally, as shown by the line AB. With the square folded as shown in Fig. 93, begin to weave the ends back, as shown in Fig. 94. Fig. 94 also shows the way strip No. 2 is woven in alongside of strip 2A, which is the other end of No. 2. Fig. 94A shows 2A taken out of the woven square. Fold strip along EF and we have Fig. 94B. Fold along the line AB and Fig. 94C is the result. Fig. 94D shows the reverse side of 94C. The foregoing illustration simply shows the way a strip may be folded back and one-half of the strip woven along the side of the other half. The weaving is continued until Fig. 95 is reached. Cut off to the desired height, as indicated by the dotted line, Fig. 95.

The basket is finished by placing two strips about the width of those used in the weaving, around the top; one on the inside and the other on the outside. With a piece of raffia threaded in a darning needle overcast the top, as shown in the finished basket.

The handle may be placed between the strips at the top and



FIG 96



FIG 96A



FIG 97

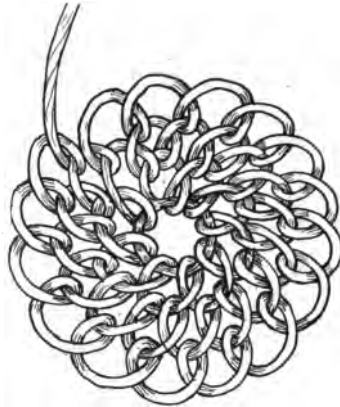


FIG 98

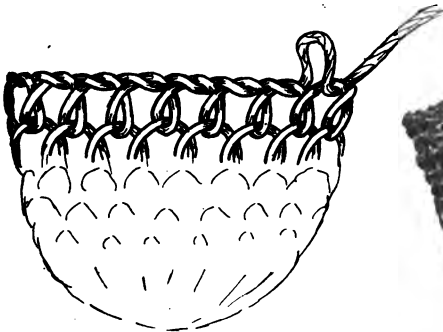


FIG 99



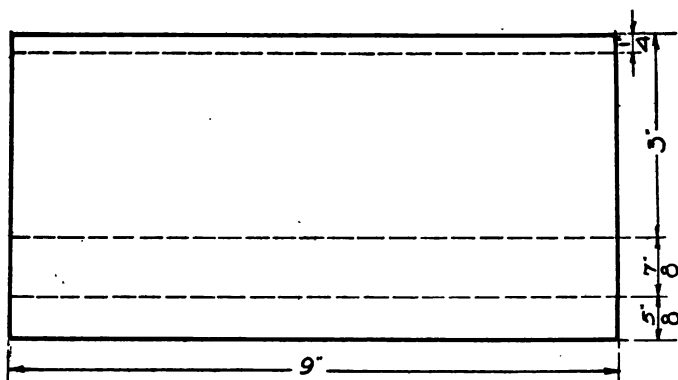


Fig 100

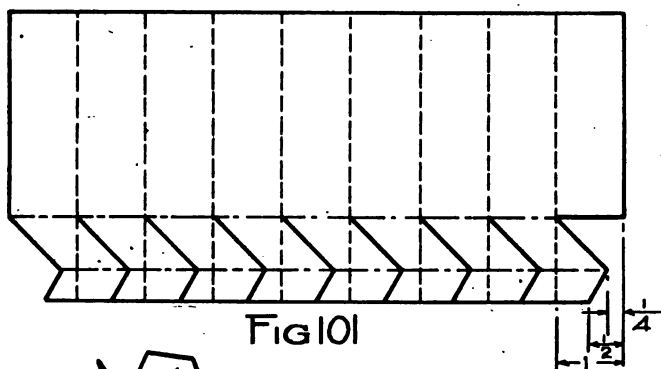


Fig 101

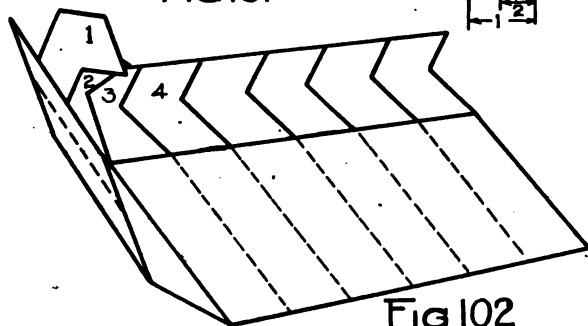


Fig 102

held in place by allowing the needle to pass through the top finish and handle.

The finished basket makes a most attractive problem and may be used with great success in the third grade.

Paper Strips:

The basket may be constructed of paper strips. In such a case the strips, when the weaving is completed, should be pasted at the corners. This will prevent any pulling away that is very apt to occur if the paste is not used.

Any wood stain may be used in finishing the splint baskets.

Rope Basket

The finished basket shown in Fig. 99A is made of a single hemp rope. The entire basket is made by using the single net mesh. The beginning is shown in Fig. 96A. A circle, which is the foundation for the beginning, is made at one end of the rope. Note the position of the end at the close of the first time around, shown in Fig. 96. It will be observed that in the first two or three times around two loops are made in each mesh as shown in Fig. 97. As the work progresses a single loop is made in each mesh, as shown in Fig. 98.

The basket is shaped by pulling or drawing each successive row of loops a little tighter.

Fig. 99 shows the way the top is finished.

Twisted handles are applied and the basket is finished as shown in Fig. 99A.

Most interesting door mats may be made by using the same looping system.

Paper Flower Pot for Germinating Purposes

To encourage pupils in gardening.

To relate number and construction.

Material:

- 1 package of construction paper.
- 1 box paper fasteners.

Presentation:

Elementary science, or sometimes called nature work, is generally taught in all the schools.

Flowers are attractive in both the school and the home. Flower seeds are not so expensive but almost anyone who so desires may have them. During the autumn pupils were encouraged to gather seeds. They are now interested in planting them. This may be done by sowing in a shallow box. After the plants have grown to a height of from $\frac{1}{4}$ inch to 1 inch they should be transplanted to individual jars. Paper jars may be used.

To Construct the Jar

Draw a rectangle $9 \times 4\frac{1}{2}$ inches.

Place the rectangle so the long edges are parallel with the front edge of the desk.

On the right and left edges place dots 3 inches from the upper corners. Connect corresponding dots by straight lines. On the right and left edges and $\frac{1}{8}$ inch from the line just drawn place other dots and connect by straight lines. On the right and left edges place dots $\frac{1}{4}$ inch from upper corner and connect by a straight line. This forms a rim around the top when folded over. Figure 100.

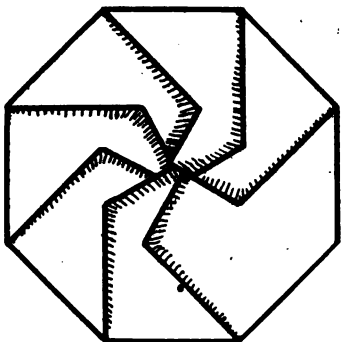


FIG 103

On the long edges place dots one inch apart and connect by straight lines. Fig. 101.

In the first row of Fig. 101 are oblongs one inch long and one-half inch wide.

On the back edge of each oblong place a dot $\frac{1}{4}$ inch from the upper right corner. On the front edge of each oblong place a dot $\frac{1}{4}$ inch from the front right corner. Connect these dots by straight lines as shown in Fig. 101.

Connect the dots on the back edge with upper left corner of the oblong just above Fig. 101.

Cut on all continuous lines and crease all dotted lines. After the cutting has been done it will be observed that there are nine divisions. In putting together the ninth division is slipped under the first.

To form the bottom place the cutting on the desk so that the parts forming the bottom are at the top. Fig. 102.

The small scale-like divisions which form the bottom are in a turned over position. Beginning at the left let the first division slip under the second, the second under

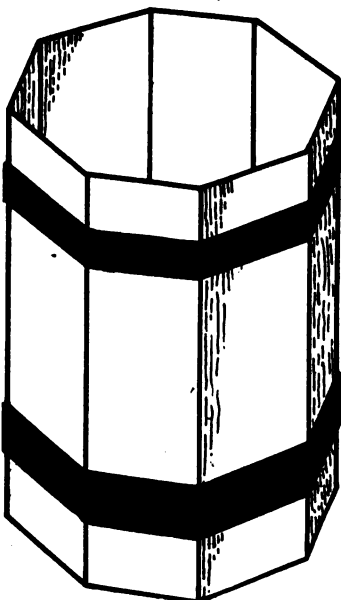


FIG 104

the third, the third under the fourth, and so on to the last one to the right. The last one is slipped under the first, forming the bottom. Fig. 102.

Paste is applied to the ninth and tenth divisions of the upright part and overlaps the first and second. Have the pupils experiment in forming the bottom before applying paste to any part. Fig. 103 shows the bottom of the jar. The paper fasteners should be used in addition to the paste in holding the upright part together. The paper fasteners are used because the moisture in the earth may soften the paste, causing a separation. The jar is now finished. Fig. 104. The small seedlings are transplanted to the paper jars and left until several inches tall. In transplanting to the garden the paper may be cut or torn away, thus avoiding any interference with the roots of the plants. Place all the paper jars together in rows in a shallow wooden box. It is surprising how long these paper jars may be used without becoming soaked by the moisture.

Half-inch bands of another color of paper may be used just below the top and just above the bottom of the jar. Fig. 104.

Materials for March:

Marble or Jackstone	{	50 pieces strawboard, $3\frac{1}{2} \times 5$ inches.
Bag		2 pkgs. darning needles, No. 12.
		1 spool carpet warp.

Ash Splint	{	Gauge for cutting splints.
Basket		2 rolls ash splint.
		Needles and thread.

Rope Basket— $3\frac{1}{2}$ lbs. one-ply hemp rope.

Paper Flower Pot for Germinating Purposes—1 pkg. 6x9-inch tinted construction paper.

APRIL

Cutting and Tearing

The work of this grade since the interests center about Easter is similar to that of the first and second grades.

Have the pupils cut and tear flowers, rabbits, chickens, ducks, etc. The Easter display in the various stores will offer many suggestions to the pupils.

Clay

If there is clay on hand use it in the modeling of any of the above suggestions for cutting and tearing.

Folio

Material:

Cover paper for outside covering, lining, and pockets.

Cloth board cut $7\frac{1}{2} \times 9\frac{1}{4}$ inches.

Bookbinders' cloth.

Narrow tape Star No. 29.

Flour paste.

Purpose:

To provide a place to keep drawings, number and language papers.

To teach system.

To teach neatness, accuracy, and skill.

To provide a means of teaching number in the concrete.

Presentation:

After a short discussion on the folio and its use, present to the class a finished folio. Discuss the value of the stiff covers—the pockets—why a dark paper cover is better for school purposes than the lighter shades—way of putting in the tape, etc.

To Construct the Folio

First. Cut a strip of bookbinders' cloth $4\frac{1}{2} \times 10$ inches. Draw a lead pencil line down center of strip on under side. One-quarter inch each side of this line and parallel to it, draw other lines. There is now a half-inch strip measured off through the center. Fig. 105.

Second. Apply paste to entire strip. Lay covers lengthwise on the pasted strip so that one long edge of each cover just meets the lead pencil line at each side of center. There is now a space of $\frac{1}{4}$

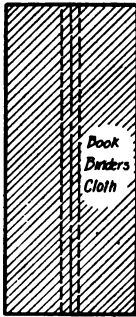


FIG 105

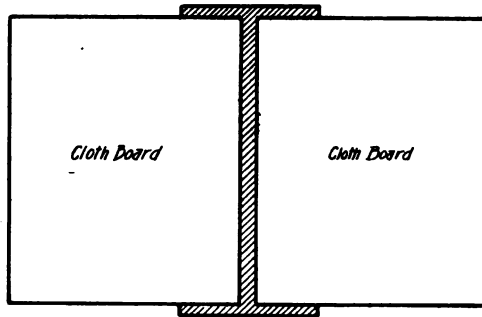


FIG 106

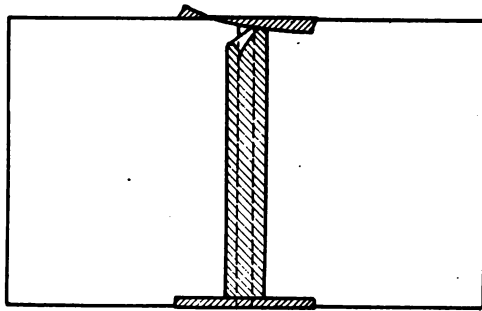


FIG 107

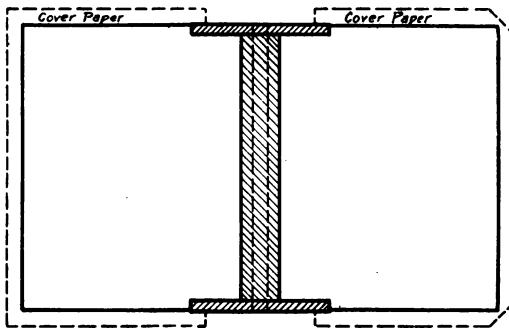


FIG 108

inch between the covers. Fig. 106. The covers are so placed as to allow a surplus at top and bottom. Fig. 106.

Third. On the inside and down the center lay another pasted strip of bookbinders' cloth $1\frac{1}{4}$ inch wide and just as long as the cover. Press down well with a cloth. Turn the surplus at top and bottom

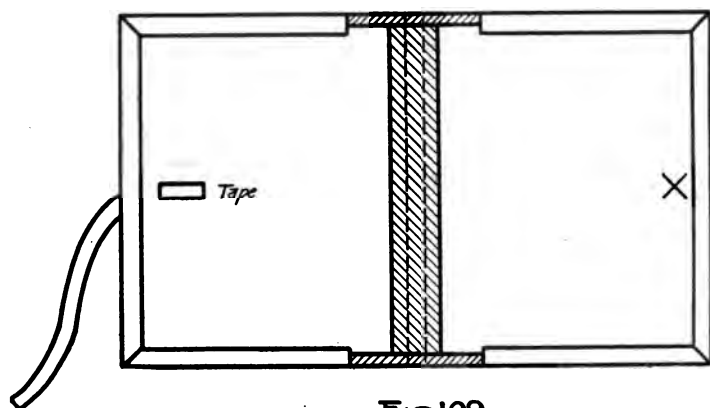


FIG 109

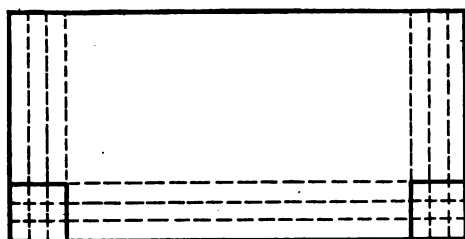


FIG 110

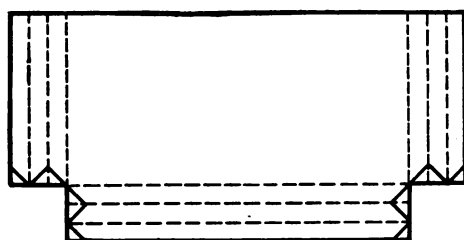


FIG 111

over to inside of book. Fig. 107. It is very necessary that, in order to secure good work, the covers be laid (open) in a book press. Lay a narrow strip of strawboard down center between the covers.

Fourth. In a day or two, the bookbinders' cloth will have dried so that the work may be resumed without danger of the covers coming apart.

How large must a piece of cover paper be to cover one side of the folio, if the paper is to extend about one-quarter inch over the edge of the bookbinders' cloth, and one-half inch over the edges of the foundation cover (the clothboard), as shown by dotted lines? Fig. 108 (left cover). After the cover paper has been cut for the two sides, apply paste to the cover paper, and place it on the cover. Press well on the right side, and before turning edges over to inside of cover, cut away piece at corner as indicated in Fig. 108 (right side). Fold over edge at top and bottom first, and then the long edge. Fig. 109 shows edges turned (right side).

Paste other side of cover.

After the cover paper has been pasted, the work should be placed in the press.

Fifth. The tape should now be placed. Cut two pieces of tape, each 9 inches long. With a punch, or an $\frac{1}{8}$ -inch or $\frac{1}{4}$ -inch chisel (borrowed from the manual training department), cut or punch each

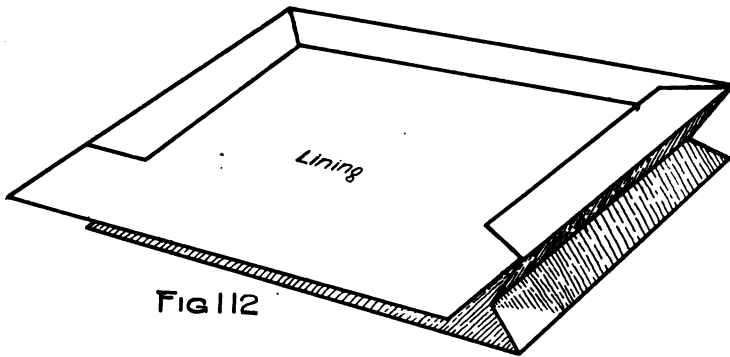


FIG 112

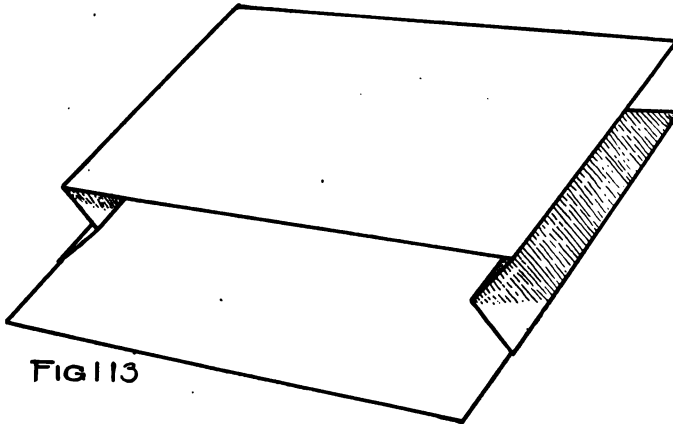
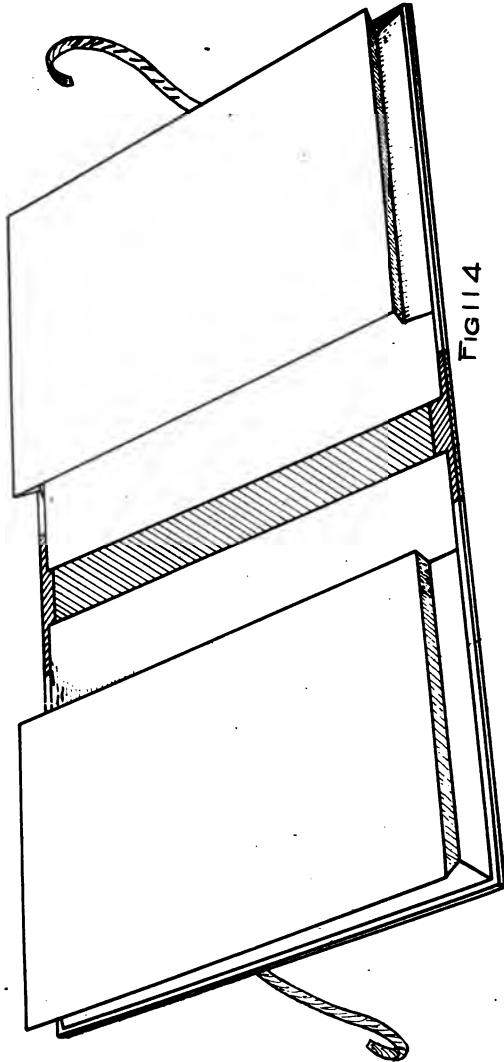


FIG 113

side of cover about one inch from long edge and half way from top to bottom edges, as indicated by cross in Fig. 109 (right side). The tape is drawn through the opening and pasted to inside of cover. Fig. 109 (left side).

Sixth. *The Lining.* How large must a piece of cover paper be



to cover about $\frac{1}{4}$ inch of the bookbinders' cloth down the back, and that will come about $\frac{1}{8}$ of an inch from the edges of the cover?

After the lining has been cut to the proper size, the pockets are placed on the lining before the lining is pasted to inside of covers.

Seventh. *The Pockets.* Cut a strip of cover paper 6 inches wide and 3 inches longer than the lining. Mark off half inches as shown in Fig. 110.

Divide the space at bottom and right and left sides into three parts. Fold back and forth on dotted lines as though making a fan. Fig. 111. Cut away corners as indicated in Fig. 111.

Allow the lining to slip into outer fold, pasting this fold to under side of lining. Fig. 112. Fig. 113 shows right side.

Paste is now applied to under side of lining (with pocket attached), and pasted to inside of cover, so the pockets open to the inside of book. Fig. 114.

If the pocket opening points toward outer edge of covers, the contents will drop out of pocket as soon as the tapes are untied.

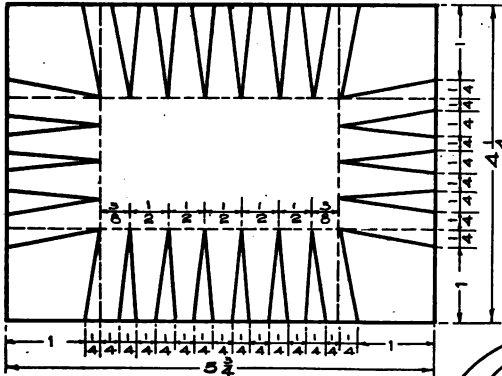


Fig 115

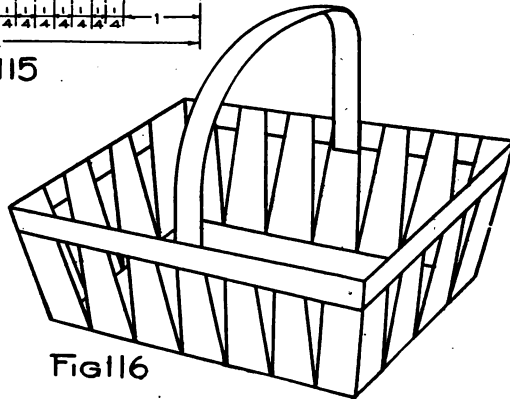


Fig 116

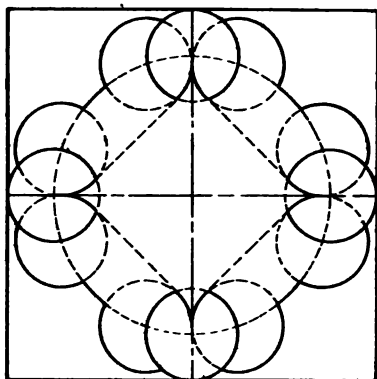


Fig 117

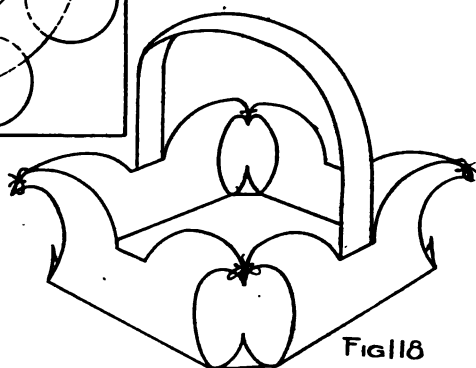


Fig 118

May Baskets

Material:

Tinted construction paper.

Purpose:

To keep before the pupils the custom of the making and the giving of May baskets.

To give concrete number.

To have pupils think constructively.

To have pupils form habits of neatness and accuracy.

Presentation:

May baskets should be made the latter part of April. They may be constructed any time during the month.

Avoid presenting the baskets to the class in a mechanical way. Show to the pupils the finished baskets suggested in the outline. Do these baskets bear resemblance to anything the class has constructed? How large a piece of paper do you think it will take to construct the basket suggested in Fig. 116? How would you proceed to construct the basket? Allow different pupils to express their ideas. If necessary, take the basket apart so its construction may be more easily understood. Pass to each pupil the necessary materials and

tools and ask him to make a basket as nearly like the one presented to him as he can.

May Basket

Place upon the board a drawing of Fig. 115 large enough so that it may be seen from any part of the room. The pupils, understanding the meaning of the various dotted and continuous lines, should be allowed to construct the basket without help after receiving the material for same.

It must be remembered that all continuous lines are cut and all dotted lines are scored. The strip around the top of the basket as shown in Fig. 116, is 12 inches long and $\frac{1}{4}$ inch wide. Before pasting the strip it is creased into four parts just fitting the sides and ends. Do the creasing in such a way that the seam will come at the middle of a side or end. Fig. 116 shows finished basket.

May Basket

In this basket is found the circle. If the pupils do not have a compass proceed to make a circle maker as suggested in a previous outline. It might be well for the teacher and pupils to work together in the construction of this basket. Fig. 118.

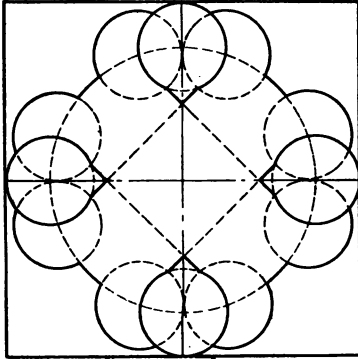


Fig 119

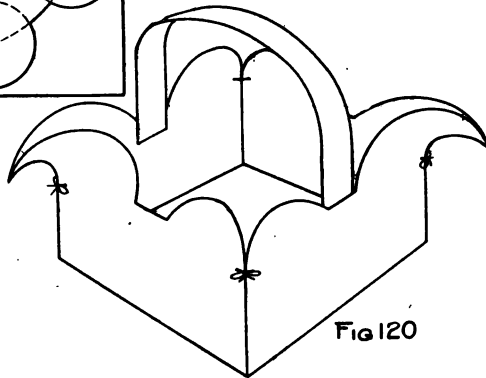


Fig 120

Before beginning to construct the basket, give a review in the use of the circle maker by having the pupils draw a 6-inch, a 4-inch, and an 8-inch circle. Let him determine that he will want 3 inches on the circle maker to draw a 6-inch circle; 2 inches for a 4-inch circle; 4 inches to draw an 8-inch circle.

To Construct the Basket

First. Draw a 6-inch circle.

Second. Bisect the circumference of 6-inch circle, both vertically and horizontally by placing dots on circumference.

Third. With each of the points as a center draw a 2-inch circle.

Fourth. Where these circles intersect the large one as a center, draw other 2-inch circles. Fig. 117.

Fifth. Draw square in center. This is done by placing the ruler across the points where the middle 2-inch circle intersects each of the others.

Sixth. Cut along outer edge and along heavy lines. Crease on dotted lines and tie at corner. Cut handle $8\frac{1}{2} \times 1\frac{1}{2}$ inches.

Fig. 118 shows the finished basket.

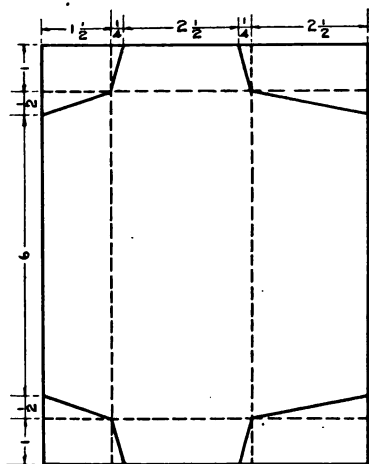


Fig 121

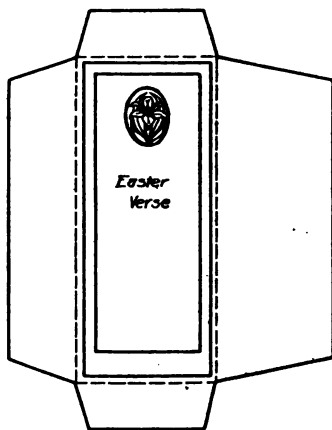


Fig 122

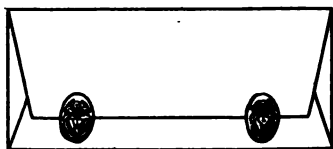


Fig 123



Fig. 124 Easter Holder.

Easter Basket

The drawing for this basket is the same as shown in Fig. 117. The cutting, however, is somewhat different. The entire center circle of each group of three is cut away. This cutting is indicated by the heavy lines shown in Fig. 119. Fig. 120 shows the finished basket tied at the corners.

Easter Cards

The Easter cards and folders never grow old to the pupils of the lower grades.

Fig. 121 shows the drawing for a folder while Fig. 122 shows the card placed and pasted to the inside of the folder. Fig. 123 shows the folder closed with the Easter seals. Fig. 124 shows the card and verse used.

Material for April:

Folio { 20 sheets cover paper, 20x26 inches.
100 pieces of cloth board, $7\frac{1}{2} \times 9\frac{1}{4}$ inches.
2 bolts of tape, narrow.
2 yds. bookbinders' cloth.
1 pkg. 9x12-inch construction paper.

May Basket, Fig. 115—1 pkg. 6x9-inch construction paper (100 pupils).

May Basket, Fig. 117—1 pkg. 9x12-inch construction paper.

May Basket, Fig. 119—1 pkg. 9x12-inch construction paper.

Easter Sentiments—1 pkg.

Easter Folder—1 pkg. 9x12-inch construction paper.

MAY AND JUNE

Doll's Hammock

This is a problem which will interest the boys of the third grade as well as the girls. The problem of the hammock involves a certain amount of work in design before beginning the work in weaving.

Confine the work in design to stripes, working for good proportion.

Purpose:

- To continue the interest in weaving.
- To afford opportunity for practical drawing.
- To continue constructive number work.

Material:

- Full sheets of jute board cut by the pupils to desired size.
- Two brass rings $\frac{3}{4}$ inch in diameter, or loops of string.
- Colored candle wicking or any other weaving material not too coarse.

Harper packing needle for weaving or wooden needle.

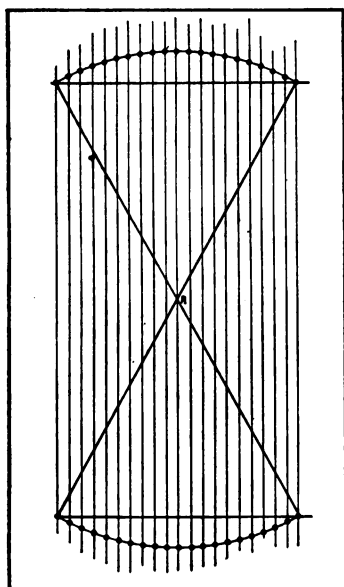


Fig 125

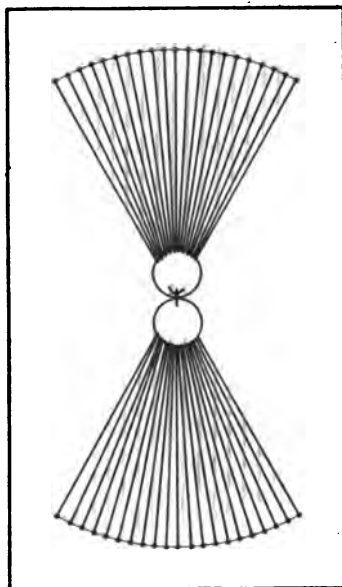


Fig 126

Presentation:

To make the loom draw on a piece of cloth or strawboard a rectangle 5 inches by 9 inches, as shown in Fig. 125. On the short edges place dots one-fourth inch apart. Draw diagonals as shown in Fig. 125. With "A" as a center and a radius equal to half the length of the diagonal draw the arcs as shown in Fig. 125. If compasses cannot be borrowed from the fourth or fifth grade have the pupils make the strawboard circle maker as described in previous work and use it in drawing the curves shown in Fig. 125.

Connect corresponding dots by straight lines, allowing them to pass through the dots to the curved lines, Fig. 125. Where the straight lines meet the curved one, prick holes by using a darning needle. On the center line place dots one-fourth of an inch above and below the center, as shown in Fig. 125, and prick holes.

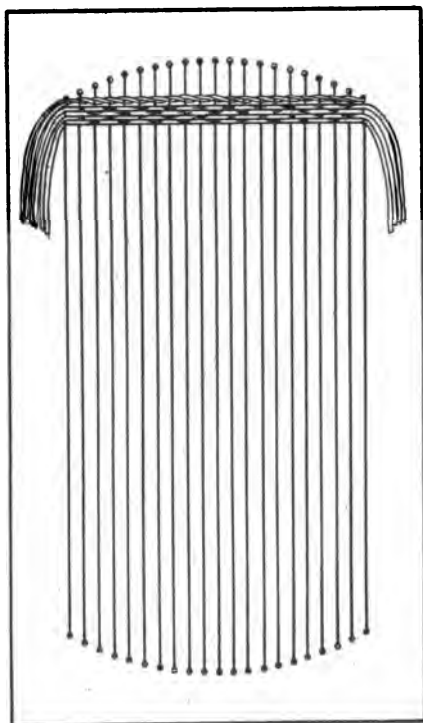


Fig127

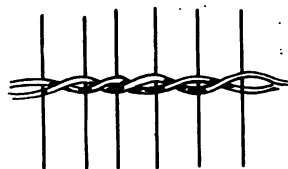


Fig128



Fig129

To String the Loom:

Take the two rings or loops of carpet warp and tie together and then tie to center of loom by passing ends of cord through holes which have been pricked one-fourth of an inch from center, Fig. 126. Take a long needful of twine, tie one end to a ring or loop, pass needle through upper corner dot, turn the loom and pass through opposite lower corner dot, then through the other ring, back through second lower dot, then through second upper dot, and so on, until all the holes are strung with straight parallel strings on one side, Fig. 127, and oblique strings from holes to the rings on the other, Fig. 126. Fasten by tying to ring.

When piecing the carpet warp do so by tying on the side on which are the parallel strings, as the knots will then be covered by the weaving. It makes a more finished piece of work.

To Weave:

Place the loom on the desk so the short edge is parallel with the front edge of the desk. At the top and bottom make a selvage by doubling the string in the center and crossing it between each string of the warp, so that the string that was under becomes the upper one each time. This is called pairing, or "single twist" in basketry. Fig. 128.

Pick up every other thread of the warp (Fig. 127) with the ruler, just as though it were a wooden needle, turn it up on edge and it raises every other thread. Through this opening (called shed) pass the Harper packing needle threaded with the twine of which the hammock is to be woven. Allow the ruler to again lie flat. Push it forward so as to press the thread just drawn through close to those previously put in.

In carrying the weaver back push the ruler away from the weaving already done and weave back under and over with the needle. Leave the threads at each side long enough to make a fringe, as shown in Fig. 127.



Fig. 130 Finished Hammock.

To Tie the Fringe:

Hold the loom the long way and at right angles to the worker. Begin at the bottom and tie a knot as in Fig. 129. Even the fringe, cut the threads holding the rings or loops, and break the loom away at top and bottom, thus removing the hammock from the cardboard loom. Fig. 130 shows finished hammock.

Score Card

The score card is a very excellent exercise in ruling. It develops neatness, accuracy, and skill in doing the work.

See September outline for full directions on the score card.

The game there described is always interesting and may be used at this time. The following is a very good number game for third-grade pupils. On the score card is kept each pupil's record.

Shuffle Board

This game is very popular on ocean steamers, as the passengers find much interest in playing the game.

To play the game it will be necessary for the manual training

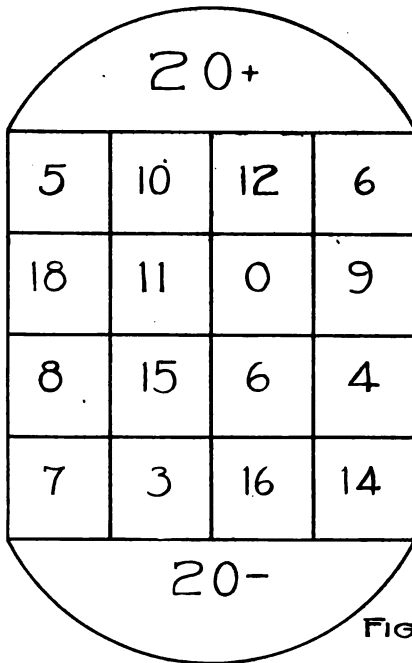


FIG 134

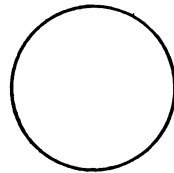


FIG 131



FIG 132

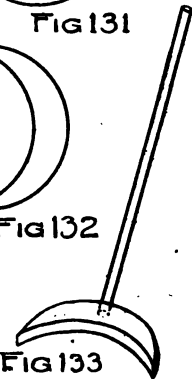


FIG 133

teacher of the older classes to construct the necessary equipment, which consists of the following:

6 disks of $\frac{3}{4}$ inch poplar 6 inches in diameter, Fig. 131.

6 crescent-shaped pieces of $\frac{3}{4}$ inch poplar, Fig. 132.

Each crescent has a handle made of a dowel rod, Fig. 133.

If the school does not have a manual training department there will be no difficulty in interesting some child's father in making the necessary apparatus to play this very interesting game. Too much stress cannot be placed on the value of the practical number work which grows out of the playing of games.

On the floor is drawn a four-foot square divided into square feet, Fig. 134. To the front and back are drawn arcs, as shown in Fig. 134.

This drawing should be so placed as to run with the cracks in the floor. Within each square is found a number stating its value. The spaces in the front and back also have values.

A mark is placed on the floor to show where each one should stand when taking his part in the game.

To Play the Game

Six pupils, each having a disk and a shuffle stick (crescent with handle), are ready to begin. The disk is placed on the floor and with the shuffle stick is given a push. If the disk lands in one of the squares the value of that square is credited to the one pushing it, and is recorded on the score board. If it lands in the space in the front that amount is taken from the record made by the row in which the pupil sits. As soon as one pupil has played he picks up the disk and shuffle stick and gives them to some other pupil. In this way the game does not lag and every pupil has an opportunity to take part in a single period.

Materials for May and June:

	100 $\frac{3}{4}$ inch brass rings.
	50 pieces strawboard, 9x5 inches.
Hammock	50 darning needles.
	50 packing needles.
	2 spools carpet warp.

Score Card for Shuffle Board—Manila document, 4 $\frac{1}{2}$ x6 inches.



Index

- Alphabet Book, 37
- Animals, Cutting of, 118
- Artificial Flowers, 183
- Badges, 85, 114, 177, 198, 265
- Basket, Ash Splint, 268
 - Berry, 120
 - Christmas, 155, 245
 - Circular, 143
 - Easter, 105, 285
 - May, 190, 282
 - Popcorn, 56
 - Thanksgiving, 148
- Bean Bag Game, 199
- Bed, Making a, 76, 169
- Bird Cage, 119
- Bird House, 108
- Block Print, 9, 166
- Boat with Sails, 45
- Book Bag, 249
- Book Mark, 60; Circular, 247
 - Double Weaving, 142
 - Rectangular, 247
- Book Press, 260
- Box, Candy, 61
 - Colored Sticks, 131
 - Cover, 21
 - Initial Blends, 184
 - Picture Number Cards, 25
 - Pin Holder, 159
- Box, Shoe Pegs, 18
 - Vocabulary Cards, 51
 - Weather Record, 91
- Button Hook, 159
- Cages, 204
- Cake Basket for Christmas Tree, 58
- Calendars, 62, 156
- Candy Box, Triangular, 246
- Chains, Decorative, 73
- Chair, 76, 171
- Chicken Coop, 97
- Christmas Tree Decorations, 56, 156
- Christmas Tree Ornament, 59
- Church, Construction of, 49
- Circle Maker, 239
- Circus Parade, 203
- Clay Box, 34
- Clay Modeling, 25, 44, 56, 83, 95, 105, 114, 190, 276
- Cradle, 48
- Cupboard, 88, 169
- Cutting Book, 33, 138
- Cutting Gauge, 270
- Cutting in Mass, 9
 - to Line, 25
 - Freehand, 83, 95, 105, 114, 125, 138, 146, 155, 173, 190, 198, 219, 227, 266, 276
- Cutting Splints, 270
- Darning Cotton Case, 64
- Davenport, 77, 171
- Doll's Hammock, 287
- Doll House, 74, 165
- Dominoes, 101
- Drawing of Squares, 177
 - Oblongs, 178
- Drawstrings, Making, 268
- Dresser, 88, 171
- Easter Cards, 111, 195, 285
- Envelope, Cutting, 9
 - Decorating, 14
- Envelope for Matching Number Game, 31
 - Peg Board, 29
- Fences, 96
- Flower Cutting, 117
- Flower Pot, 202
- Flower Pot and Plant, 114

- Follo, Construction of, 276
 Foot Rule, 71
 Fringe Tying, 290
 Fruit Basket, 202
 Furniture for Doll House, 85
 Geometric Game, 112
 Go-Cart, 138
 Group Problem—The Circus Pa-
 rade, 118
 The Farm, 96
 Half Inch, Developing, 139
 Hair Receiver, 61
 Handkerchief Bag, 241
 Hektograph, 17
 Indian Head-Dress, 148
 Kerchief, 148
 Lanterns, 36, 58, 141, 219
 Leaves, 117
 Log House, 46, 84
 Loom, Construction of, 242, 250
 Stringing, 289
 Threading, 266
 Marble or Jackstone Bag, 266
 Mat for Kitchen Floor, 165
 Mat, Raffia, 179, 243
 Weaving, 78
 Multiplication Game, 228
 Needle Book, 237
 Number Book, 100
 Number Cards, Use of, 129
 Number Game, 53, 151
 Paper Flower Pot for Germi-
 nating Purposes, 273
 Pegs, Use of, 23
 Peg Board, 27
 Phonograms, 131
 Picture Frame, 58
 Pin Case, 157; Cross-stitched, 236
 Pin Wheel, 95
 Puritan Cap for Girls, 147
 Puritan Cradle, 228
 Reading a Pattern Drawing, 213
 Reins, 121
 Ring Toss Game, 201
 Rope Basket, 273
 Rugs, Woven, 181
 Ruler as a Straight Edge, 27
 Score Cards, 198, 211
 Serving Table, 89, 180
 Shaving Pad, 62
 Shuffle Board, 290
 Sideboard, 180
 Soldier Cap, 87, 147
 Spelling Blank Book, 149, 215;
 Decorated, 263
 Spelling Blank Cover, Hinged, 255
 Stems, Leaves and Flowers, 202
 Sticks, Use of, 136
 Story Book, 65
 Stove, 89, 180
 Table, 75, 170
 Trees, 50, 83
 Trunk, 88
 Valentines, 91, 173, 178, 261
 Weaving a Hammock, 289.
 Weaving an Iron, Poker or Kettle
 Holder, 161
 Weaving a Stocking Cap, 233
 Wagon, Covered (Prairie Schoon-
 er), 84
 Wagon, Construction of, 98
 Wall Pocket, 58
 Window Boxes for Doll House,
 184
 Word Book, 222
 Word Building Game, 196
 Woven Work Bag, 239

s, 147

awing, 2

dge, 2

.49, 26

aged, 2

s, 202

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